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The 1990 MPhA Mid-Year Educational Seminar
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All Pharm.D.— Good, Bad or Indifferent?

Well the news is out. The University of Maryland School of Pharmacy faculty has voted to phase-in an all Pharm.D. program as the sole entry level degree offered by 1995.

Your association has already begun studying this issue. I have appointed an ad-hoc School of Pharmacy Committee, chaired by Lance Berkowitz, to develop recommendations for MPhA actions. Your input is going to be vital in directing how we should respond to this proposal because it *will* change pharmacy in our state—in ways we may not even expect.

I want you to begin thinking *now* how you would respond to these questions:

1) Will I pursue additional education to achieve an external Pharm.D. degree? How can the School make this education possible for me?
2) What effect will an all Pharm.D. program have on my marketability as a pharmacist? What impact will it have on my ability to hire staff pharmacists?
3) Will the School's decision in any way affect my support of the School? the Alumni Association?
4) What one thing, if any, should MPhA do about the move to an all-Pharm.D. program?

We have invited representatives from the School of Pharmacy to make a presentation at our Mid-Year Educational Seminar on February 11, 1989 in Annapolis. If you haven't already registered, there is an additional form on page 25 of this issue. MPhA also plans to assist local pharmacy associations by encouraging state-wide presentations by the School over the next several months.

In the meantime, think about it!

Nathaniel Futeral, P.D.

President

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Update on OTC Ophthalmic Products

by J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

and

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

Goals

The goals of this lesson are to:

1. discuss the current ophthalmic drug product ingredients permitted for OTC use; and
2. present information that can be conveyed to consumers about self-treatment of ophthalmic conditions.

Objectives

At the conclusion of this lesson, participants should be able to:

1. choose from a list of ophthalmic product ingredients, those that are safe and effective for OTC use;
2. identify ophthalmic conditions that are amenable to self-treatment;
3. select specific terms that relate to the eye and ophthalmic drug products; and
4. choose appropriate therapy to recommend for self-treating ophthalmic conditions.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from

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Gossel

Wuest

The Food and Drug Administration has issued its final monograph on the regulation of OTC ophthalmic drugs used as astringents, demulcents, emollients, hypertonicity agents, vasoconstrictors, and eye washes (Table 1). The rule became effective in March, 1989.

Along with the final rule, FDA addressed a number of comments that were submitted by representatives of industry, medicine, pharmacy, and consumer groups. These comments, and FDA's responses, will be reviewed in this article. Also, information for properly advising consumers on the selection of these products will be highlighted. Before discussing the FDA rulings, it will be helpful to review conditions that are considered to be self-medicatable, and the normal function of the eye as it relates to these conditions.

Physiologic Function of the Eye

The **cornea** is a clear, transparent, lipid layer of the outer coating of the eyeball which forms the anterior wall of the aqueous chamber. It is exposed to the atmosphere and can be medicated.

It is comprised of five layers of tissue: the outermost (epithelium) and innermost (endothelium), both of which are lipophilic (repel water). The three midsection layers are hydrophilic and contain water. The lipophilic property of the cornea is important in

Table 1

FDA's Definitions of OTC Ophthalmic Drug Products

ASTRINGENT:	A locally acting pharmacologic agent which precipitates protein and helps to clear mucus from the outer surface of the eye.
BUFFERING AGENT:	A substance which stabilizes the pH of solutions against changes produced by introduction of acids or bases from such sources as drugs, body fluids, tears, etc.
EMOLLIENT:	An agent, usually a fat or oil, which is applied locally to eyelids to protect or soften tissues and to prevent drying and cracking.
EYEWASH, EYE LOTION, IRRIGATING SOLUTION:	A sterile aqueous solution intended for washing, bathing or flushing the eye.
HYPERTONICITY AGENT:	An agent which exerts an osmotic gradient greater than that present in body tissues and fluids, so that water is drawn from the body tissues and fluids across semi-permeable membranes. Applied topically to the eye, a hypertonicity agent creates an osmotic gradient which draws water out of the cornea.
VASOCONSTRICTOR:	A pharmacologic agent which, when applied topically to the mucous membranes of the eye, causes transient constriction of conjunctival blood vessels.

relation to absorption of medication from ophthalmic drops.

Corneal cells allow unimpeded passage of light to the retina. The cornea is kept shiny and lubricated by tear fluids which moisten its surface and fill in irregularities in the epithelium.

Unless it is diseased, corneal epithelium has the capacity of covering abrasions within 24 hours. Unlike most other tissues, a healthy cornea will heal without leaving a scar.

There are no blood vessels in the cornea, but there are numerous nerve fibers which make it one of the body's most sensitive organs. It is circular and fits like a watch glass into the double edges of the sclera.

The **sclera** is the white portion of the eye that forms a relatively tough covering. Along with the cornea, it provides the external protection for the eye. The sclera comprises the greatest portion of the external eye and is covered by a filmy, moist membrane, the **conjunctiva**. This extends from the juncture of the cornea and sclera outward to the margins of the eyelid. It is a thin, transparent layer of mucous membrane which lines the posterior portion of the eyelid and the anterior portion of the sclera.

The conjunctiva supplies blood, nutrition and oxygen to the corneal tissues and removes waste products. Its major function is to maintain a healthy cornea and sclera. Conjunctival secretions assist in reducing inflammation of blood vessels in the sclera that cause the eyes to redden when they are irritated.

Self-Treatable Eye Disorders

Only a few disorders of the eye can be correctly self-diagnosed and safely self-treated. The eye preparations available without prescription provide symptomatic relief. They do not resolve underlying causes.

When individuals misdiagnose their conditions, serious problems can occur and the condition worsen. Or, it may prevent early, definitive physician-initiated therapy with an appropriate drug. It is, therefore, best to stop using OTC products and contact a physician if the condition does not respond within a few days.

The three conditions that FDA considers to be self-treatable are corneal edema, tear deficiency, and minor inflammation and irritation.

Corneal Edema. Corneal edema cannot be self-diagnosed, but it can be treated with an OTC product under a physician's supervision. It involves excessive water between the epithelial and endothelial layers. This leads to corneal swelling and impaired vision. Symptoms include foggy vision, irritation, photophobia, and excruciating pain.

Corneal edema can result from underlying causes such as glaucoma, degeneration of corneal cells, inflammation of the iris, other ocular inflammation, infection, and excessive wearing of contact lenses. In each instance, the cause must be corrected. Hypertonic agents, e.g., 5 percent sodium chloride, are recommended for temporary relief.

Minor Irritation and Inflammation. This is most often exhibited by burning, itching, smarting, stinging, tearing, and redness. These symptoms can be alleviated with an eyewash, astringent, demulcent, emollient, or vasoconstrictor.

The types of ocular inflammation and irritation that are amenable to self-medication with OTC ophthalmic products are those caused by the presence of loose, easily removed foreign particles, airborne pollutants such as cigarette smoke and allergens, and chlorinated water in swimming pools. Large foreign bodies should be professionally removed to prevent damage to delicate eye structures.

Tear Deficiency. This results from inadequate lacrimal and ocular secretions. Corneal tissues require water; its absence for a few moments can lead to the onset of corneal deterioration.

Tear film is comprised of three layers. The innermost layer of mucin is deposited by the conjunctiva as the eyelid blinks. Mucin adheres to the corneal surface, lowers its surface tension, and converts it from being totally hydrophobic to less hydrophobic, so that lacrimal secretion, which is basically normal saline, can spread over the corneal surface.

The aqueous layer of tear film, which is secreted by the lacrimal gland, contains the key components for corneal nutrition and metabolism, and antimicrobial lysosomes. Lysosomes are substances produced by the body that destroy microbial cells.

The outermost layer of tear film — the lipid layer, is supplied by the conjunctiva. It provides stability to the lacrimal secretion, prevents rapid evaporation, holds it in place for awhile, and spreads it over the cornea.

Dry eye syndrome resulting from tear deficiency can be extremely painful when non-wetted areas of the cornea are continually exposed to atmospheric irritants and mechanical irritation from blinking. Artificial tear products are intended to adsorb onto the cornea, increase viscosity, and provide pain relief. Periodic moist compresses are also helpful, as is raising the humidity of environmental air. Severe cases may require a corneal bandage type of contact lens.

Ocular demulcents and emollients alleviate burning, discomfort, and the dry feeling associated with tear deficiency. Some causes of tear deficiency require medical supervision, but treatment usually involves long-term use of ocular lubricants.

Safe and Effective OTC Eye Remedies

Ingredients that are considered to be safe and effective for OTC ophthalmic products are listed in Table 2.

Astringents precipitate protein in cells on the surface of epithelial tissue. On skin or non-ocular mucous membranes, they provide a protective and sometimes styptic activity. This action can damage the cornea. However, zinc sulfate, in a 0.025 percent solution, is sufficiently mild and reportedly helps remove mucus from the corneal epithelial tissues, providing relief from discomfort of minor eye irritations without damaging the cornea itself. The official indication for OTC astringent eye drops is for temporary relief of discomfort from minor eye irritations.

Demulcents are high molecular weight, water-soluble substances, applied to the eye to protect and lubricate mucous membrane surfaces and relieve dryness and irritation. To some extent they mimic the natural demulcent mucus secreted by the conjunctiva.

Ophthalmic demulcents are used as tear substitutes and as contact lens lubricants. They are also used to relieve symptoms of irritation caused by airborne irritants and allergens, and by exposure to wind and sun.

Emollients are oily/fatty substances that are applied to eyelids to protect or soften tissue and prevent its drying

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Table 2

Safe and Effective OTC Ophthalmic Product Ingredients

ASTRINGENTS:
Zinc Sulfate, 0.25%

DEMULCENTS
Carboxymethylcellulose, 0.2-2.5%
Dextran 70, 0.1%
Gelatin, 0.01%
Gycerin, 0.2-1%
Hydroxyethylcellulose, 0.2-2.5%
Hydroxypropyl methylcellulose, 0.2-2.5%
Methylcellulose, 0.2-2.5%
Polyethylene glycol (300-400), 0.2-1%
Polysorbate 80, 0.2-1%
Polyvinyl alcohol, 0.1-4%
Povidone, 0.1-2%
Propylene glycol, 0.2-1%

EMOLLIENTS
Anhydrous lanolin, 1-10%
Lanolin, 1-10%
Light mineral oil, Up to 50%
Mineral oil, Up to 50%
Paraffin, Up to 5%
Petrolatum, Up to 100%
White ointment, Up to 100%
White petrolatum, Up to 100%
White wax, Up to 5%
Yellow wax, Up to 5%

HYPERTONIC AGENTS
Sodium chloride, 2-5%

VASOCONSTRICTORS
Ephedrine HCl, 0.123%
Naphazoline HCl, 0.01-0.03%
Oxymetazoline, 0.025%
Phenylephrine HCl, 0.08-0.2%
Tetrahydrozoline HCl, 0.01-0.05%

and cracking. They can lubricate the conjunctiva and cornea in tear deficiency states, prevent irritation from airborne irritants, and prevent excessive loss of moisture from the cornea.

Emollients also form the basis for ointment vehicles. Those approved for OTC use are derivatives of lanolin, petrolatum, wax and other hydrocarbons.

Eye ointment bases are often combinations of various emollients. For example, while petrolatum can be used alone as a vehicle; lanolin, wax, and paraffin are not appropriate for direct application in their natural forms. However, they are excellent for incorporating drugs into, and increasing the consistency of other ointment bases. Approved indications for OTC demulcents and emollients are:

- temporary relief of burning and irritation due to dryness of the eye;
- temporary relief of discomfort due to minor irritation of the eye or to exposure to wind or sun;
- for use as a protectant against further irritation or to relieve dryness of the eye; and
- for use as a lubricant to prevent further irritation or dryness of the eye.

Eye washes are sterile aqueous solutions intended for bathing, flushing, or rinsing the eye. They are isotonicity and/or buffering solutions.

Eye washes are not indicated for treating a disorder. Instead, they are used for diluting or removing irritants from the eye. This overcomes the eye's natural reflex of uncontrolled blinking and alleviates discomfort. Approved indications are:

- for bathing/cleansing/flushing/irrigating/washing the eye to remove air pollutants — smog or pollen/chlorinated water/loose foreign material;
- for bathing/cleansing/flushing/irrigating/washing the eye to help relieve burning/discomfort/irritation/itching/smarting/stinging by removing air pollutants — smog or pollen/chlorinated water/loose foreign material.

Eye washes should not be used if the eye is injured. When damage is present, the eye's defense mechanisms are compromised and physician intervention is necessary.

Vasoconstrictors cause temporary constriction of blood vessels in the conjunctiva when applied to ocular mucous membranes. Approved for OTC distribution are ephedrine, naphazoline, oxymetazoline, phenylephrine, and tetrahydrozoline.

As sympathomimetic amines, these agents stimulate the adrenergic receptors in blood vessels in irritated conjunctiva, thereby constricting them. Higher doses are used professionally to produce mydriasis (dilation of the pupil), and in open-angle glaucoma, to lower intraocular pressure. Conversely, with narrow-angle glaucoma, ocular vasoconstrictors can raise the intraocular pressure and they are contraindicated.

When the cornea or conjunctiva is irritated, tear secretion increases in an attempt to dilute or remove the irritating substance. At the same time, blood vessels underlying the sclera dilate as part of the inflammatory response and white blood cells migrate to the area. All of this results in hyperemia (excessive blood flow) and edema, commonly referred to as redness of the eye.

OTC ophthalmic vasoconstrictors are officially approved for use in relieving redness of the eye due to minor irritation. In some individuals, therapy including a vasoconstrictor plus the astringent zinc sulfate can enhance anti-irritant activity. This particular combination is also included in the safe and effective OTC ophthalmic drug category.

Hypertonic agents exert a greater osmotic pressure than the surrounding tissues and fluids from which they draw water. Applied to the eye, they create an osmotic gradient that attracts water from the mid-portions of the cornea. Although the epithelial and endothelial layers are lipid in nature, the mid-portion contains water. Excessive accumulation of water leading to corneal edema can occur. When it does, vision is impaired and pain can occur.

In patients with corneal edema, a hypertonic agent will draw excess fluid from the cornea and improve eyesight and relieve pain. Corneal edema cannot be self-diagnosed, but once it has been professionally diagnosed, self-medication is possible.

Surprisingly, it is not always possible or desirable to correct the underlying cause of corneal edema. Oftentimes this cannot be determined. Hypertonic preparations cannot cure the condition, but they do relieve symptoms. For this reason and because they are relatively innocuous, approved hypertonic agents are available OTC. Personal preference dictates whether the ointment or solution forms are better. Several studies have found that 5 percent sodium chloride ointment in a petrolatum/wool fat base is more effective than lower strengths, or the 5 percent solution.

For individuals wearing contact lenses, especially the hydrophilic bandage type, the solution is preferred. There is less chance that it will impede visual acuity since the ointment may be deposited on the lens.

Adjuvants Added to Eye Preparations

A number of things can happen to an ingredient in an eye preparation when it is applied. Eye drops are diluted by tears and quickly removed by tear flow. Substances in tear fluid can

Proper Administration Techniques

Eye drops: Wash the hands thoroughly and gently pull the eyelid down with one hand. Hold the container above the eye and gently squeeze to allow one drop to fall inside the lower lid while looking upward.

Individuals who flinch when instilling eye drops can lay the neck of the dropper unit (the spiral bevel where the top screws on) across the bridge of the nose so that the tip of the dropper is just above the eye and the drop cannot be seen as it falls.

After the drop has been instilled, release the lower lid but try to keep the eye open and not blink for at least 30 seconds. This will allow greater distribution of the drug and minimize the amount that would be forced out during blinking.

Eye ointments: Wash the hands thoroughly and gently pull down the lower eyelid with one hand. Look upward and squeeze a small amount (1/4 to 1/2 the length of the lower lid) of the ointment along the lower lid.

After application, release the eyelid and gently close it. Roll the eyeball in all directions without squeezing the eye too tightly shut. Be careful to prevent the end of the tube from touching any surface and replace the cap as soon as possible.

Those having difficulty self-applying an eye ointment can instill the ointment while sitting in front of a mirror with elbows resting on the edge of the sink or table. This way they can watch themselves and be sure no damage will be done.

Eye washes in a container with a nozzle: Squeeze the container gently and apply the wash in a steady stream. Keep a towel handy and a basin to catch the runoff.

Products used with an eye cup: Rinse the cup with tap water before and after each use to minimize the chance of contamination. Fill the cup half way with eyewash, press it tightly to the area around the affected eye, and then tilt the head backward holding the cup firmly against the eye. Open the eyelids as much as possible and rotate the eyeball to ensure complete irrigation of the eye.

bind with or degrade drugs, causing them to become inactive. For a number of reasons, the dynamics of drugs can be greatly altered by such factors as irritating capacity, metabolism, compatibility, stability, protein binding, pH and tonicity of the active ingredient. Therefore, many factors must be considered in ophthalmic drug therapy because all of these can affect the pharmacologic activity of the drug.

Ophthalmic solutions are generally buffered, isotonic, self-sterilizing, and at times, highly viscous. Buffering assures stability of active ingredients since most are weak acids or weak bases. On the other hand, the buffering system must allow tear fluid to readjust to its normal pH of 7.4 after the medication is instilled into the eye.

Drugs that are easily oxidized require an antioxidant to assure stability. Isotonicity minimizes the chance of discomfort when the drug is applied. There is great leeway because the eye can tolerate a tonicity range equivalent to 0.5 to 1.8 percent sodium chloride.

The most important factor for ophthalmic solutions is maintenance of sterility. All must be sterile. If manufactured in a multi-use package, they must contain a preservative to prevent microbial growth. Proper resealing of the container by the patient is also important to minimize the chance of invasion by pathogenic organisms.

Consumer Advice

There are no overt side effects associated with the use of OTC ophthalmic preparations. Demulcents may seep out of the eye onto the lid or lashes and dry, thus forming crusts on the eyelids. While some individuals may be annoyed by this, these crusts can be easily removed by a washcloth or tissue soaked in warm water.

Emollients and some viscous demulcents can cause temporary blurred vision because they initially form a film over the cornea. This is not harmful because the film will only last for several blinks to a few moments. This probably should be explained to a person using an eye ointment for the first time and to small children so they know what to expect.

There is a slight chance that ophthalmic vasoconstrictors may cause toxicity if absorbed into the systemic circulation. Absorption can occur if the drug passes through the conjunctival capillaries or drains into the nasal mucosa through the nasal lacrimal duct. Toxicities that have been reported are from high strength prescription-only ophthalmic vasoconstrictors. There is little evidence that OTC vasoconstrictors cause a problem in most patients. Patients with glaucoma should consult their physician before self-medicating with OTC ophthalmic vasoconstrictors.

If the person experiences eye pain, changes in vision, continued redness or irritation of the eye, or if the condition worsens or persists for more than 72 hours, he should discontinue use and consult a physician. Also, consumers should be advised not to use any ophthalmic solution that is discolored or cloudy, and avoid contamination of the tip of the container during use.

Continued from page 9. . . .

clinical-based computers and I think we need to look at developing a clinical computer system that can support the clinical practice of pharmacy, to support the pharmacist becoming responsible for the drug therapy outcome.''

HCFA wants a quick fix right now, and it does not realize that the systems it wants to use will cheat the patient in the end.

''I think that they can do what they want, but it's going to be a failure. For one thing, it won't include concurrent OTC drug uses. It'll have so many faults it'll fall flat on its face.''

The current uproar over the catastrophic Medicare law gives pharmacy some time to change attitudes. By working together, upgrading professional standards and bringing public support to bear, Gans makes it clear that APhA and the other groups in pharmacy can bring long-needed change to health programs. It's about time!

This feature is presented on a grant from ''Dickinson's Pharmacy—The Independent Voice,'' an 8-page practical monthly newsletter available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45.

Commentary

Dickinson's Pharmacy

by Jim Dickinson

Wind of change at APhA. The squabbling is over. Now pharmacy can get its act together and fight the common enemy—the Health Care Financing Administration and those in other programs that imitate its contempt for pharmacy.

That may sound like a lot to say, but it's the impression you're left with after an hour probing the mind of John A. Gans, the new broom at the American Pharmaceutical Association.

He believes in working with all of the organizations in pharmacy, helping them do their thing where he's wanted—which is in the strengthening of pharmacy's professional role. And from what I've heard already, the other organizations like that.

For instance, hear Gans speak out against the anti-professionalism of mail-order pharmacy, for which he blames his fellow pharmacists as well as their exploiters: "If the pharmacist's responsibility is simply getting the right drug to the right patient, then mail-order would be the way to go. . . . That's the distribution end. I don't think that you can practice pharmacy that way."

He thinks pharmacy should put its money where its mouth is on this and other survival issues—and that will mean taking on more responsibilities.

Gans believes that if third-party payors won't listen to pharmacy—and there's little evidence that they will—then let them hear directly from pharmacy's patients. He wants pharmacy to use its resources to fund a major consumer study that will tell legislators, bureaucrats and third-parties alike—and pharmacists, too!—what the consuming public wants from pharmacy.

Gans is already moving on this, conferring first with state pharmacy associations "who have as much at stake in this as we do."

Moreover, he believes that other studies notwithstanding, the public does indeed know what it wants, and that is more information and professional counseling from the pharmacist, especially among the aging segment of the population.

"The pharmacist has to assume responsibility for what happens to that drug when the patient takes it—and we are not there yet," Gans told us.

"But we are getting there and we have some excellent examples today of pharmacists assuming responsibilities for what happens in patients. And the classic one is in long-term care, where pharmacists monitor and review what the individual patient is taking within a 30-day period and make recommendations. They make sure that the laboratory tests are done, make sure that the patient is responding to the drug, try to identify if toxicities are occurring, look at the chart, physical therapy maybe, saying 'Hey—this patient was able to ambulate before and now seems to be regressing and it could be a side effect of the drug or it could be the sedation of three drugs.' That is pharmacy's ultimate mission."

Gans acknowledged that there's a large gap between what pharmacists in long-term care facilities can do and what other pharmacists do.

That's because the former have a data base, and the latter do not—which makes him deeply critical of the Health Care Financing Administration's current proposal to provide "prospective DUR" under the new Medicare Catastrophic drug benefit.

"That's an oxymoron, if you know what that term means," Gans scoffs. "It doesn't mean anything. How can you do drug utilization review that's, by definition, retrospective?

"That's the practice of pharmacy and we don't need a computer to do that!

"What we could use from HCFA is more data, diagnosis of the patients and laboratory results, full computer screens of that information, organized in a way that it could be rapidly reviewed by the pharmacist. I think what the government would like to do would be to extend the activity that the long-term consultant pharmacists have been doing for their patients, to Medicare patients. And they're going to try to do it with a computer.

"They're going to fail because they won't have the full drug usage of the patient, they won't have the laboratory data available. All they're going to do is basically go on some arbitrary drug interaction scaling system when we all know, as practitioners, that there's a lot of clinical judgment in determining whether or not: 1) the drug interaction is occurring; b) how significant is it; c) what are the risks versus the benefits?"

Gans and the other national pharmacy leaders agree that HCFA's proposal would cut pharmacy out of the therapy loop and leave everything between the doctor and the HFCA computer.

Most, if not all, pharmacy computer systems are business-based, Gans says—geared to accounting purposes, third-party billing, reordering supplies, etc. "They are not

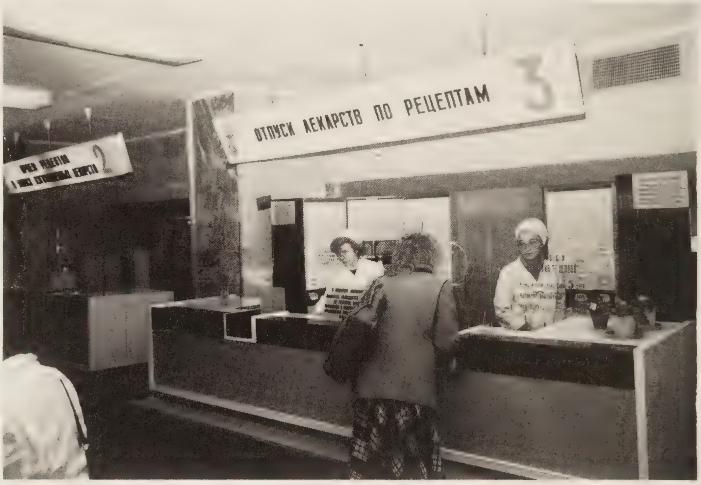
Continued on page 8. . . .

Pharmacy Russian Style

The sign read "Anteka"—(pharmacy)—pharmacy #280 at 34 Kalinin Avenue in Moscow, actually. We walked upstairs and into a very spacious and modern room. There were four, numbered prescription counters very much like the tellers's' windows at an american bank. The numbered signs stated the service provided at that counter. For instance, prescription required, no prescription required, compounding required, and IV service. On the left was a "kacca"—(cashier). A white-jacketed and hatted woman sat on a stool waiting to total up sales. The total was computed on an abacus and then rung up on the cash register. To the left of the cashier stood a glass display case (about 3 × 4 feet) with OTC preparations available upon request. A pharmacist in white hat and coat attended this area to answer questions and advise patients. The preparations for sale included amidopyrine tablets for headaches, senna tablets for constipation, various herbal remedies, glass baby bottles, bandages, and nitroglycerin gelseals for sublingual use. Everything was labeled in Cyrillic letters, in Russian and the Latin name, if any, was written in Roman letters. Most of the medications were made in Eastern Europe–Hungary, East Germany, etc. Many bottles still use corks, covered with glassine paper and tied with a string.

We were greeted by the manager, Mrs. Margarita Lavreena. Mrs. Lavreena welcomed us and ushered us into her office to make a formal presentation about Soviet pharmacy. She told us that medications are not covered under the government controlled medical care program in Russia. They are usually paid for by the individual. However, if the individual is unable to afford the medication, the state pays the bill. Also, certan World War II veterans and chronic disease states (diabetics, cancer, etc.) receive medications free of charge. Mrs. Lavreena said that many prescriptions are compounded, as was we saw when we toured the facility.

The government has a regulatory agency to oversee the introduction of new drugs. The U.S.S.R. formulary (similar to the USP) is revised every five years. All medications are obtained through a central warehouse in Moscow.



Prescription Counter in Pharmacy #280, Moscow, USSR. Sign reads "Rx Drugs" [sic].

Education of the pharmacist is three tiered; eight years of high school and three years of college or ten years of high school and two years of college qualifies a person as an assistant pharmacist. Ten years high school and five years college qualify a person as a registered pharmacist. These pharmacists are usually in management positions. The students do some internship in an assigned pharmacy, but not to the extent we are experiencing in the U.S.A. today.

There are five hundred pharmacies in Moscow of which approximately four hundred are located in Polyclinics (this is in a city of nine million people). Polyclinics are general medicine clinics located in designated districts of the city. They are also connected with large factory complexes. We were told that new pharmacies are established at a rate of about twenty to twenty-five per year. (This is questioned by one of the authors—the lack of population growth does not support this claim.)

Pharmacists work thirty hours per week (six days) and are paid 250–300 roubles per month depending upon training, years of service and incentives. One month's vacation and twenty-five days at a health workers' spa in the south per year are additional benefits. The health spa benefit is very difficult to obtain. Permission can only come from a doctor assigned to your work place and is very hard to obtain. You also have to pay a portion of the cost (usually about thirty per-cent). Sick leave is not specific, but is available upon a doctor's certification. Women can have seven days off per month, with pay, to care for a sick child if needed. Maternity leave is one year at half pay and two years without pay, but your job is guaranteed. Your performance is reviewed every five years and promotions, bo-

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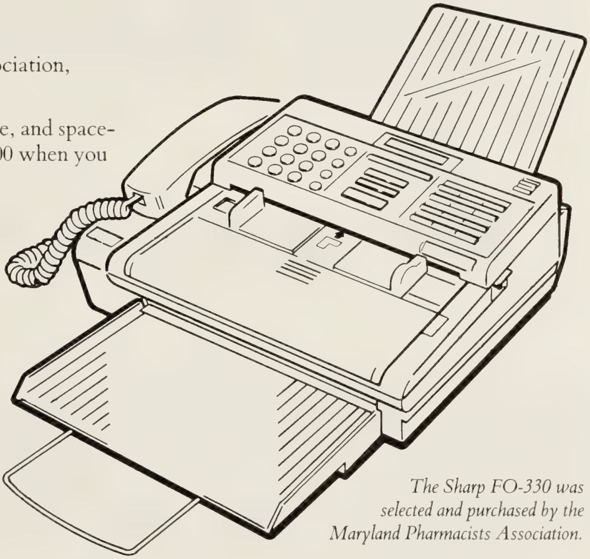

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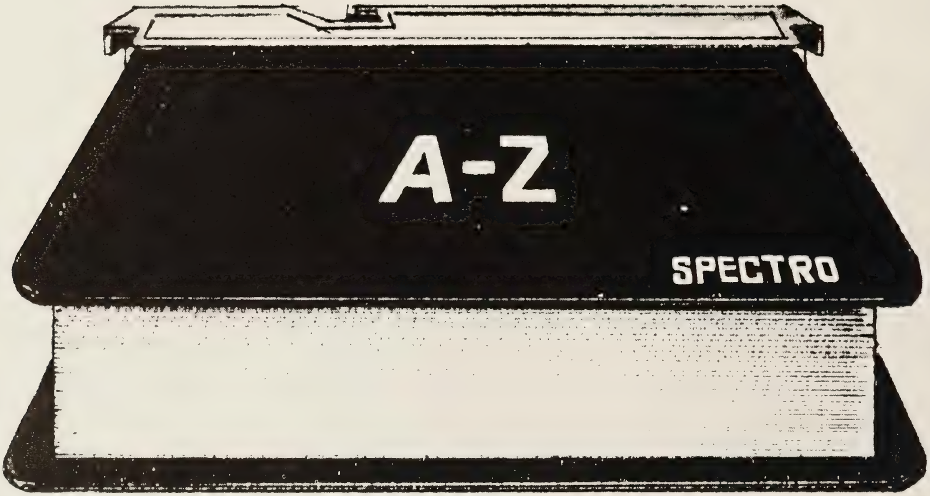

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nuses and pay raises are obtained at that time.

You are assigned to a pharmacy upon being registered and may not change that position until after three years. The pharmacy we visited in Moscow has a staff of sixty-five, forty-four of whom are pharmacists. All are *female*. Ninety-nine percent of pharmacists in the U.S.S.R. are females; dispensing is considered "woman's work". Everyday this pharmacy caters to the needs of about two to three thousand patients, filling about fifteen hundred prescriptions.

Upon touring the "backrooms", we stepped into dispensing and general pharmacy labs of the 1950's. We thought we were back in school (at least this old timer did). All drugs were stored in neat rows in closed cabinets. There were prepackaged drugs, some familiar to us: antibiotics, antifungals, hydrocortisone, furosemide, and tranquilizers. Surprisingly the generic name of the drug was written in English. Our hosts explained to us that English is the universal language! Other cabinets revealed glass apothecary jars of various chemicals. These were not for show, they really used them in compounding.

Compounding is still alive and well in the Soviet Union. The majority of prescriptions are written for liquid preparations. Many preparations are made into stock solutions stored in burettes on a carousel. The pharmacist calculates the required amount for the prescription and measures it into the bottle. We watched a white-uniformed pharmacist make a topical preparation from a prescription. Gues what?—The prescription was written in English. The label was handwritten, not typed. Next, the pharmacist passed the finished prescription to an analytical chemist to check for accuracy. Now that's quality control on the spot! When the finished prescription is given to the patient, the written prescription is returned (except for certain controlled medications). Also, before leaving the room we observed a male student preparing powder papers. Powder papers are the second most popular form of preparation.

Mrs. Lavreena then showed us the autoclaving and distilling room. They make sterile products for a cancer clinic in the district and must have these facilities, the water is also distilled on the premises. The sterile IV room was all windows with an ultraviolet lamp over the door to insure sterility. There was no Laminar flow hood.

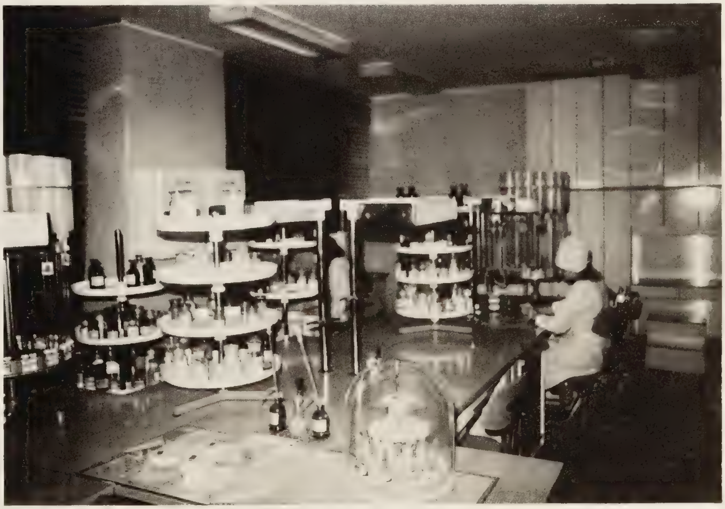
We noticed all the windows were wired for burglar alarms. Mrs. Lavreena explained to us that they keep narcotics for the cancer patients and this was necessary. When asked, she admitted they have theft and forged prescription problems. Some problems are alleviated by having a list of patients authorized to receive narcotics written by the clinic physicians. The narcotic blanks are a special color and serial numbered. Alcohol is not kept in the pharmacy, it is only available on special request. Rubbing alcohol is not obtainable in the country.

The question and answer period with Mrs. Lavreena was spirited and very informative. She told us she has no control over the budget or purchasing for her pharmacy, everything comes from the central heath office. She is assigned a certain number of patients and staff. The agency tells her what to have on hand for those assigned patients. She may obtain any additional supplies from the central warehouse if the need arises.

We had to walk upstairs to get into this pharmacy—handicapped have no access. (Although some pharmacies have elevators to reach the second floor). Infirm and homebound get their medicine delivered —this pharmacy owns a car!

Now lets be honest, this was a very large and busy pharmacy in the nations' capitol. We saw another pharmacy on one of their showcase collective farms in southern Russia (Kafkas) and it was considerably smaller and less busy. It was still very neat and clean with modern architecture. The chief pharmacist was a male—very unusual. We checked over the shelves here too and we found a bottle of "Plaquenil" from Sterling Drug in England. There was less stock available in this outlying pharmacy.

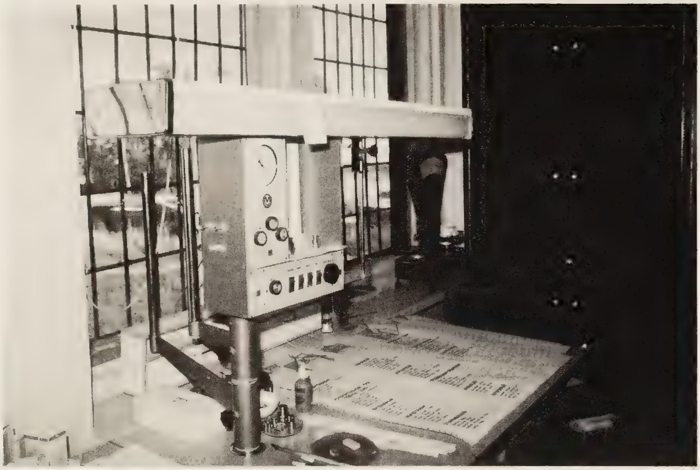
Leningrad—the window on the West—the hermitage, canals, many preserved czarist palaces. Here we visited an experimental herbal pharmacy, #191. It serves as a pilot project to evaluate the use of herbal medicine. The manager, Mrs. Tatyana Drekalova, and her assistant, Mrs. Tafyan Andreeva, indicated that there were two hundred and fifty pharmacies in Leningrad served by two distribution warehouses and



Compounding room in Pharmacy #280, Moscow, USSR.

two factories, one herb farm and one quality assurance laboratory. The annual sales for their pharmacy were in excess of one million roubles.

This pharmacy was especially interesting because of the herbal medicine dispensed. There is a general medicine physician in attendance for three hours each day. She sees patients and prescribes herbal medicines and teas. The pharmacy has an adjoining tea room for dispensing these prescribed teas. They have over one hundred different herbal teas they may prescribe. The pharmacists have had some extra training in pharmacognosy, but most training is on the job and textbook research. The pharmacy employs about eighteen, eleven of whom are pharmacists. What memories of pharmacognosy! We thought they were long lost—but not in Russia!


Herbal Pharmacy #191, Tea Room, Leningrad, USSR.

Remember the twenty-five days a year allowed at a health spa? Well, really it is R & R at the sea side in southern Russia on the Black Sea. The main area is Sochi. The climate is much the same as Maryland's and further south.

There is a hot sulfur springs establishment maintained by the Ministry of Health. Workers can go there for hydrotherapy of whatever ails you, take a full bath, or just soak the part of the body that is diseased. You can drink the water—much the same as Saratoga Vichy water from New York state.

In Russia, they also have what are called sanatoriums, not mental or tubercular institutions, but health spas for the workers. They are owned by the individual trade unions. Pravada, army, navy, miners, actors, etc. all have resorts in this area. We visited the "Aktorc"—actors sanatorium. Dr. Usher D. Zilber, the chief doctor of the sanatorium, took us on a tour of their facility. This was a unique opportunity to observe their holistic approach to medicine. They specialize in urologic, cardiovascular and neurologic disorders. Annually about five thousand patients are treated at this resort-facility. Each stay is for twenty-five days. The institution has a staff of eighteen physicians and seventy-two medical assistants. Mineral baths, vitamin concoctions, massage, laser acupuncture, magnet therapy, T.E.N.S. units, hypnosis and hydrotherapy are some of the methods used to treat disease states. Medications are rarely used. We noticed a large anti-alcoholism poster in the hallways. Great stress is placed on rigorous treatment for one day and then rest at the beach on the next. The diet is controlled by dieticians and prescribed meals are served in a main dining hall.

Discussions with Russian pharmacists revealed that they have not reached the level of cooperation with other medical professionals that we have. Clinical pharmacy is practically nonexistent. They thought we were M.D.'s when we described our clinical work to them. We were unable to find a poison control center in the whole country, although one doctor said there was one in Moscow. We tried to call on the phone but the person on the other end of the line feigned ignorance of its existence. There are no nursing homes for the elderly or infirm and no facilities for the handicapped to help them enter the mainstream of life.

We explained our private medical care to our Russian colleagues. They were surprised that we have medical insurance through our employers and didn't realize that we have a social welfare program for the lower income population. We explained the proposed catastrophic medicare provisions to them and this brought up the use of computers in pharmacy. The use of computers in the U.S.S.R. is nil. They were amazed at the proliferation of computer use in America.

Public health programs are not evidence. About the only major health related concern of the state is alcoholism. But this seems more social and production oriented. There doesn't seem to be any public education about high cholesterol, the dangers of smoking, carcinogens, AIDS, etc.

About AIDS—the government has recently admitted to its presence in the country. This was due to the lack of disposable syringes and needles. They admitted to infecting many babies in a hospital, but the Dean of a medical school informed us that AIDS is more prevalent than admitted and has been present in the population for quite a while. They still are forced to use glass syringes and reusable needles and, because of the shortage of these, they aren't always properly sterilized between patients.

Drug abuse is a related problem

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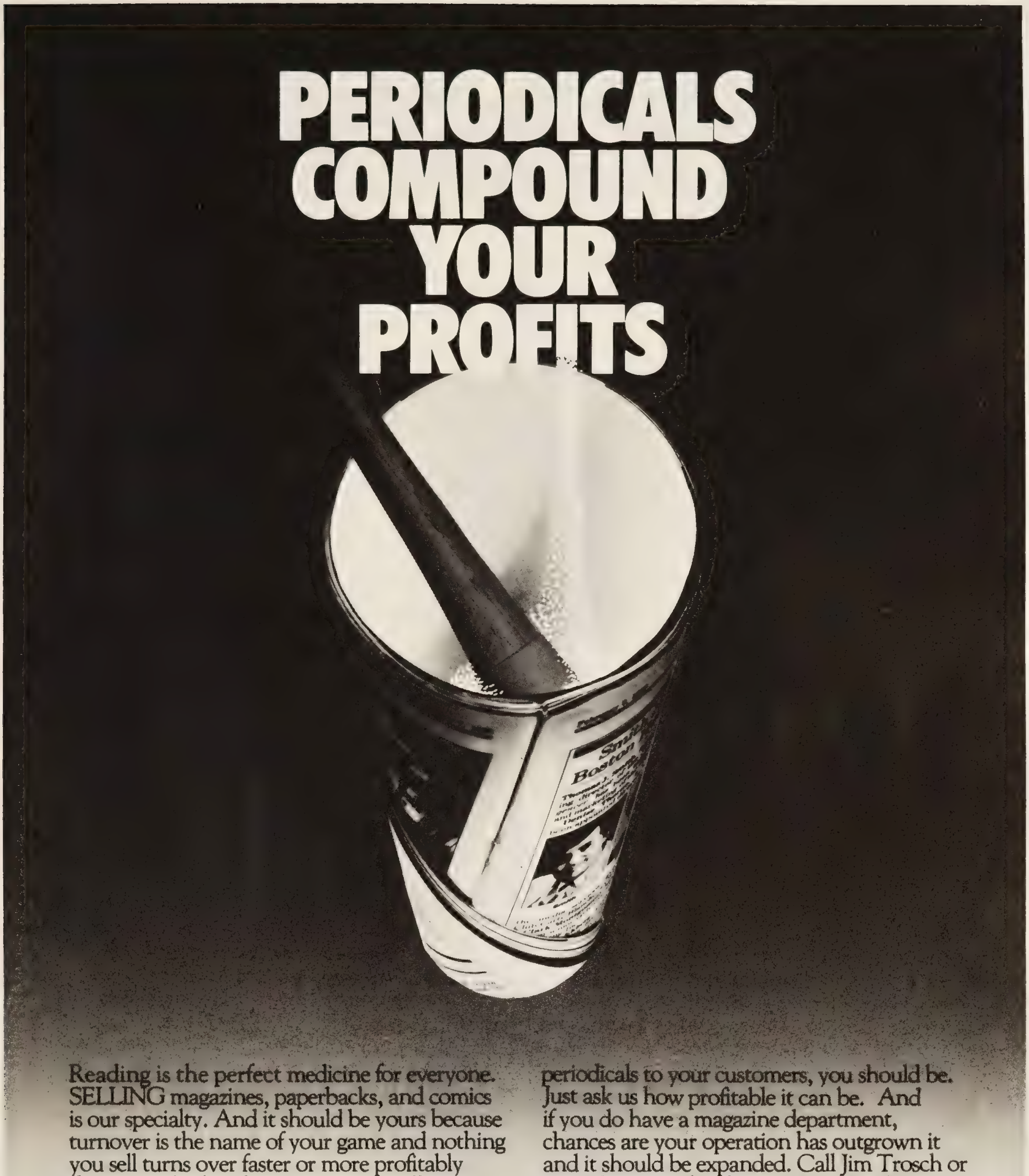

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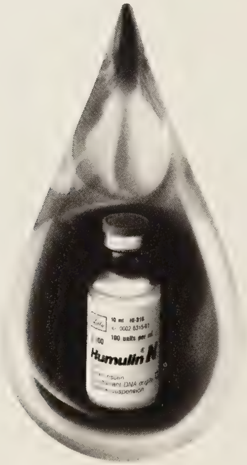

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Anderson, Curtis S., Legislative District 44, Baltimore City, W&M; (D) *301 H.O.B., Annap., 21401-1991, Tel. 3259, †2225 St. Paul Street, Baltimore, MD 21218, 323-6425.

Arnick, John S., Legislative District 07, Baltimore County, ENV; (D) *426 H.O.B., Annap., 21401-1991, Tel. 3464; †7918 Diehlwood Road, Dundalk, MD 21222, 288-2900

Ashley, John M. Jr., Legislative District 36, Caroline, Cecil, Kent, Queen Anne's & Talbot Counties, APP; (D) *405 H.O.B., Annap., 21401-1991, Tel. 3410; †Route #4, Box 222, Centreville, MD 21617, 758-0178

Astle, John C., Legislative District 30, Anne Arundel County, APP; (D) *212 H.O.B., Annap., 21401-1991, Tel. 3209; †212 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3209.

Athey, Tyras S., Legislative District 32, Anne Arundel County, W&M; (D) *100 H.O.B., Annap., 21401-1991, Tel. 3469; †100 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3469.

Avara, R. Charles, Legislative District 47, Baltimore City, APP; (D) *429 H.O.B., Annap., 21401-1991, Tel. 3547; †3508 Coolidge Avenue, Baltimore, MD 21229, 644-3057.

Bartenfelder, Joseph, Legislative District 08, Baltimore County, APP; (D) *307 H.O.B., Annap., 21401-1991, Tel. 3365; †8410 Belair Road, Baltimore, MD 21236, 529-2144

Bell, J. Ernest II, Legislative District 29B, Calvert & St. Mary's Cos., JUD; (D) *217 H.O.B., Annap., 21401-1991, Tel. 3314; †10 Court House Drive, P.O. Box 362, Leonardtown, MD 20650, 475-8421.

Bevan, William C., Legislative District 13B, Howard & Prince George's Cos., CAL; (D) *219 H.O.B., Annap., 21401-1991, Tel. 3205; †349 Main Street, Suite 22, Laurel, MD 20707, 725-0788.

Billings, Patricia H. (D), Legislative District 18, Montgomery County, CAL; (D) *226 H.O.B., Annap., 21401-1991, Tel. 3200; †3940 Rickover Road, Silver Spring, MD 29092, 946-5916.

Bishop, John J., Legislative District 09, Baltimore County, CAL; (R) *308 H.O.B., Annap., 21401-1991, Tel. 3359; †1520 Doxbury Road, Towson, MD 21204, 321-9544.

Blumenthal, Rosa Lee, Legislative District 26, Prince George's County, JUD; (D) *205 H.O.B., Annap., 21401-1991, Tel. 3012; †4400 Stamp Road, Suite 212, Temple Hills, MD 20748, 423-4130.

Boergers, Mary H., Legislative District 17, Montgomery County, ECM; (D) *225 H.O.B., Annap., 21401-1991, Tel. 3037; †4417 Puller Drive, Kensington, MD 20895, 564-0508.

Boston, Frank D. Jr., Legislative District 41, Baltimore City, CAL; (D) *314 H.O.B., Annap., 21401-1991, Tel. 3283; †2200 Garrison Boulevard, 2nd Floor, Baltimore, MD 21216, 566-3373.

Burgess, William J., Legislative District 08, Baltimore County, W&M; (D) *307 H.O.B., Annap., 21401-1991, Tel. 3365; †8215 Edwill Avenue, Baltimore, MD 21237, 866-4549.

Busch, Michael, Legislative District 30, Anne Arundel County, JUD; (D) *212 H.O.B., Annap., 21401-1991, Tel. 3211; †212 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3211.

Callas, Peter G., Legislative District 02B, Washington Counties, CAL; (D) *423 H.O.B., Annap., 21401-1991, Tel. 3449; †35 Day View Drive, Hagerstown, MD 21740, 739-0212.

Campbell, James W., Legislative District 42, Baltimore City, W&M; (D) *320 H.O.B., Annap., 21401-1991, Tel. 3297; †1329-1/2 West 41st St., Baltimore, MD 21211, 366-8160.

Chasnoff, Joel, Legislative District 14A, Montgomery County, JUD; (D) *224 H.O.B., Annap., 21401-1991, Tel. 3052; †17904 Georgia Ave. Suite 210, P.O. Box 490, Olney, MD 20832-0490, 924-4200.

Clark, William A., Legislative District 35A, Harford County, ENV; (D) *326 H.O.B., Annap., 21401-1991, Tel. 3289; †2523 Bradfield Ave., Bel Air, MD 21014-1101, 838-9433.

Colburn, Richard F., Legislative District 37, Caroline, Dorchester, Talbot & Wicomico Counties, ENV; (R) *414 H.O.B., Annap., 21401-1991, Tel. 3429; †4731 Egypt Road, Cambridge, MD 21613, 228-0437.

Connelly, R. Terry, Legislative District 06, Baltimore County, ECM; (D) *305 H.O.B., Annap., 21401-1991, Tel. 3332; †418 Eastern Blvd., Baltimore, MD 21221, 391-7800.

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Connelly, R. Terry, Legislative District 06, Baltimore County, ECM; (D) *305 H.O.B., Annap., 21401-1991, Tel. 3332; †418 Eastern Blvd., Baltimore, MD 21221, 391-7800.

Conroy, Mary A., Legislative District 23, Prince George's County, W&M; (D) *208 H.O.B., Annap., 21401-1991, Tel. 3098; †208 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 858-3098.

Conway, Norman H., Legislative District 38, Somerset, Wicomico & Worcester, W&M; (D) *416 H.O.B., Annap., 21401-1991, Tel. 3425; †1312 Whittier Drive, Salisbury, MD 21801, 543-9060.

Counihan, Gene W., Legislative District 15, Montgomery County, W&M; (D) *100 H.O.B., Annap., 21401-1991, Tel. 3521; †9901 Dellcastle Road, Gaithersburg, MD 20879, 977-5045.

Cox, William H. Jr., Legislative District 34, Harford County, W&M; (D) *326 H.O.B., Annap., 21401-1991, Tel. 3289; †141 North Main St., Bel Air, MD 21014, 879-9173.

Cummings, Elijah E., Legislative District 39, Baltimore City, CAL; (D) *141 H.O.B., Annap., 21401-1991, Tel. 3507; †2225 St. Paul Street, Baltimore, MD 21218, 366-7212.

Curran, Gerald J., Legislative District 43, Baltimore City, JUD; (D) *321 H.O.B., Annap., 21401-1991, Tel. 3308; †502 Baltimore Avenue, Towson, MD 21204, 825-6300.

Currie, Ulysses, Legislative District 25, Prince George's County, APP; (D) *203 H.O.B., Annap., 21401-1991, Tel. 3076; †7315 Calder Drive, Capitol Heights, MD 20743, 350-3345.

Davis, Clarence, Legislative District 45, Baltimore City, W&M; (D) *323 H.O.B., Annap., 21401-1991, Tel. 3325; †P.O. Box 33167, Baltimore, MD 21218, 366-0483.

Dembrow, Dana Lee, Legislative District 20, Montgomery County, CAL; (D) *226 H.O.B., Annap., 21401-1991, Tel. 3200; †11215 Oakleaf Drive #908, Silver Spring, MD 20901-1372, 681-3673.

DePazzo, Louis L., Legislative District 07, Baltimore County, JUD; (D) *305 H.O.B., Annap., 21401-1991, Tel. 3334; †1818 Tyler Road, Dundalk, MD 21222, 288-9303.

Dewberry, Thomas E.(D), Legislative District 12, Baltimore County; (D) *304 H.O.B., Annap., 21401-1991, Tel. 3378.

DiPietro, Anthony M. Jr., Legislative District 46, Baltimore City, ENV; (D) *316 H.O.B., Annap., 21401-1991, Tel. 3303; †225 South Clinton Street, Baltimore, MD 21224, 325-5400.

Dixon, Richard N., Legislative District 05A, Carroll County, APP; (D) *306 H.O.B., Annap., 21401-1991, Tel. 3371; †1224 Western Chapel Rd., New Windsor, MD 21776, 848-6945.

Donaldson, Dennis C., Legislative District 25, Prince George's County, W&M; (D) *313 H.O.B., Annap., 21401-1991, Tel. 3391; †313 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3391.

Doory, Ann Marie, Legislative District 43, Baltimore City, ECM; (D) *321 H.O.B., Annap., 21401-1991, Tel. 3308; †112 Taplow Road, Baltimore, MD 21212, 323-0401.

Douglass, John W., Legislative District 45, Baltimore City, APP; (D) *323 H.O.B., Annap., 21401-1991, Tel. 3325; †1535 East North Avenue, Baltimore, MD 21213, 752-6653.

Dypski, Cornell N., Legislative District 46, Baltimore City, JUD; (D) *316 H.O.B., Annap., 21401-1991, Tel. 3303; †638 S. Decker Avenue, Baltimore, MD 21224, 276-1974.

Edwards, George C., Legislative District 01A, Allegany & Garrett Counties, APP; (R) *411 H.O.B., Annap., 21401-1991, Tel. 3435; †Post Office Box 8, Grantsville, MD 21536, 895-5720.

Ehrlich, Robert L. Jr., Legislative District 10, Baltimore County, JUD; (R) *309 H.O.B., Annap., 21401-1991, Tel. 3350; †5 Elphin Court—#102, Timonium, MD 21093, 252-4180.

Elliott, Donald B., Legislative District 04B, Carroll & Howard Counties, ENV; (R) *306 H.O.B., Annap., 21401-1991, Tel. 3371; †204 Lambert Avenue, Box 370, New Windsor, MD 21776, 848-5373, 775-7272.

Exum, Nathaniel, Legislative District 24, Prince George's County, ECM; (D) *204 H.O.B., Annap., 21401-1991, Tel. 3065; †5611 Landover Road, Mitchell Bldg., 2nd Floor, Hyattsville, MD 20784-1244, 277-7501.

Felling, Donna M., Legislative District 08, Baltimore County, ENV; (D) *307 H.O.B., Annap., 21401-1991, Tel. 3365; †2416 East Joppa Road, Baltimore, MD 21234, 882-5023.

Flanagan, Robert L., Legislative District 14B, Howard & Montgomery Counties, JUD; (R) *226 H.O.B., Annap., 21401-1991, Tel. 3200; †12400 Clarksville Pike, Clarksville, MD 21029, 988-9818.

Forehand, Jennie M., Legislative District 17, Montgomery County, APP; (D) *223 H.O.B., Annap., 21401-1991, Tel. 3028; †712 Smallwood Road, Rockville, MD 20850, 762-4772.

Foster, Philip Carey (D), Legislative District 37, Caroline, Dorchester, Talbot & Wicomico Counties; (D) *412 H.O.B., Annap., 21401-1991, Tel. 3343.

Franchot, Peter, Legislative District 20, Montgomery County, APP; (D) *223 H.O.B., Annap., 21401-1991, Tel. 3046; †7111 Sycamore Avenue, Takoma Park, MD 20912, 270-4001.

Frosh, Brian E., Legislative District 16, Montgomery County, ENV; (D) *220 H.O.B., Annap., 21401-1991, Tel. 3045; †Suite 800 West 7315 Wisconsin Avenue, Bethesda, MD 20814, 652-2888.

Fulton, Tony E., Legislative District 40, Baltimore City, ENV; (D) *317 H.O.B., Annap., 21401-1991, Tel. 3277; †2106 Bolton Street, Baltimore, MD 21217, 383-7046.

Gary, John G., Legislative District 33, Anne Arundel County, APP; (R) *215 H.O.B., Annap., 21401-1991, Tel. 3223; †215 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3223.

Genn, Gilbert J., Legislative District 16, Montgomery County, JUD; (D) *224 H.O.B., Annap., 21401-1991, Tel. 3011; †1 Central Plaza, Suite 1204, 11300 Rockville Pike, North Bethesda, MD 20852, 881-7700.

Gisriel, Michael, Legislative District 09, Baltimore County, W&M; (D) *308 H.O.B., Annap., 21401-1991, Tel. 3359; †817 Wellington Road, Baltimore, MD 21212, 377-0509.

Gordon, Michael R., Legislative District 17, Montgomery County, W&M; (D) *222 H.O.B., Annap., 21401-1991, Tel. 3001; †416 Hungerford Dr., Suite 330, Rockville, MD 20850, 294-2100.

Guns, Ronald A., Legislative District 36, Caroline, Cecil, Kent, Queen Anne's & Talbot Counties, ENV; (D) *404 H.O.B., Annap., 21401-1991, Tel. 3442; †80 Fifth Avenue, Elkton, MD 21921, 398-6847.

Hammen, Donald, Legislative District 46, Baltimore City, ECM; (D) *316 H.O.B., Annap., 21401-1991, Tel. 3303; †821 S. Grundy Street, Baltimore, MD 21224, 342-3142.

Harrison, Hattie N., Legislative District 45, Baltimore City, ECM; (D) *323 H.O.B., Annap., 21401-1991, Tel. 3325; †1054 N. Milton Avenue, Baltimore, MD 21213, 342-4414.

Hattery, Thomas H., Legislative District 04A, Frederick County, W&M; (D) *209 H.O.B., Annap., 21401-1991, Tel. 3107; †P.O. Box 88; Mt. Airy, MD 21771, 694-0123.

Heller, Henry B., Legislative District 19, Montgomery County, W&M; (D) *221 H.O.B., Annap., 21401-1991, Tel. 3019; †12706 Turkey Branch Pkwy., Rockville, MD 20853, 949-4265.

Hergenroeder, Henry R., Legislative District 43, Baltimore City, W&M; (D) *321 H.O.B., Annap., 21401-1991, Tel. 3308; †351 Homeland Southway, Apt. 3-A, Baltimore, MD 21212, 433-4093.

Hixson, Sheila Ellis, Legislative District 20, Montgomery County, W&M; (D) *221 H.O.B., Annap., 21401-1991, Tel. 3019; †1008 Broadmore Circle, Silver Spring, MD 20904, 384-4739.

Howard, Carolyn, J. B., Legislative District 24, Prince George's County, W&M; (D) *204 H.O.B., Annap., 21401-1991, Tel. 3065; †5611 Landover Road, 2nd Floor, Mitchell Bldg., Hyattsville, MD 20784-1244, 277-7502.

Huff, W. Ray, Legislative District 31, Anne Arundel County, CAL; (D) *213 H.O.B., Annap., 21401-1991, Tel. 3217; †8349 Ritchie Highway, Pasadena, MD 21122, 647-1111.

Hughes, Ralph M., Legislative District 40, Baltimore City, JUD; (D) *317 H.O.B., Annap., 21401-1991, Tel. 3277; †2320 North Monroe Street, Baltimore, MD 21217, 225-0555.

Jefferies, John D., Legislative District 39, Baltimore City, ENV; (D) *315 H.O.B., Annap., 21401-1991, Tel. 3263; †516 North Charles Street, Suite 1B, Baltimore, MD 21201, 426-0516.

Johnson, Samuel Q. III, Legislative District 37, Caroline, Dorchester, Talbot & Wicomico Counties, ENV; (D) *415 H.O.B., Annap., 21401-1991, Tel. 3427; †P.O. Box 200, Hebron, MD 21830, 546-2400.

Jones, Christine M., Legislative District 26, Prince George's County, ECM; (D) *205 H.O.B., Annap., 21401-1991, Tel. 3012; †3518 Everest Drive, Hillcrest Heights, MD 20748, 505-2400.

Kach, A. Wade, Legislative District 10, Baltimore County, ECM; (R) *309 H.O.B., Annap., 21401-1991, Tel. 3350; †214 Ashland Road, Cockeysvillem, MD 21031, 527-1962.

Kelly, Kevin, Legislative District 01B, Allegany Counties, JUD; (D) *319 H.O.B., Annap., 21401-1991, Tel. 3454; †201 Washington Street, Cumberland, MD 21502-2826, 777-9000.

Kirk, Ruth M., Legislative District 39, Baltimore City, CAL; (D) *315 H.O.B., Annap., 21401-1991, Tel. 3263; †516 N. Charles Street, Suite 1B, Baltimore, MD 21201, 576-8614.

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Klima, Martha S., Legislative District 09, Baltimore County, APP; (R) *308 H.O.B., Annap., 21401-1991, Tel. 3359; †1403 Newport Place, Lutherville, MD 21093; 337-2799.

Kolodziejski, Charles W., Legislative District 31, Anne Arundel County, ECM; (D) *213 H.O.B., Annap., 21401-1991, Tel. 3217; †168 Carvel Beach Road, Baltimore, MD 21226, 255-5118.

Kopp, Nancy K., Legislative District 16, Montgomery County, APP; (D) *222 H.O.B., Annap., 21401-1991, Tel. 3001; †222 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3001.

Kramer, Barbara O., Legislative District 34, Harford County, CAL; (D) *326 H.O.B., Annap., 21401-1991, Tel. 3289; †118 West Bel Air Avenue, Aberdeen, MD 21001, 575-7034.

Lamb, Donald E., Legislative District 30, Anne Arundel County, CAL; (D) *212 H.O.B., Annap., 21401-1991, Tel. 3211; †212 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3211.

LaMotte, Lawrence A., Legislative District 05B, Baltimore & Carroll Counties, ENV; (D) *209 H.O.B., Annap., 21401-1991, Tel. 3109; †2702 Melrose Avenue, Woodstock, MD 21163, 461-5548.

Lawlah, Gloria, Legislative District 26, Prince George's County, CAL; (D) *205 H.O.B., Annap., 21401-1991, Tel. 3012; †3801 24th Avenue, Hillcrest Heights, MD 20748, 894-3082.

Leopold, John, Legislative District 31, Anne Arundel County, ECM; (R) *213 H.O.B., Annap., 21401-1991, Tel. 3206; †3623 Chadwick Court, Pasadena, MD 21122, 255-4477.

Levin, Theodore, Legislative District 11, Baltimore County, W&M; (D) *310 H.O.B., Annap., 21401-1991, Tel. 3342; †626 Ralston Avenue, Baltimore, MD 21209, 486-0462.

Linton, Samuel C., Legislative District 28A, Charles, APP; (D) *216 H.O.B., Annap., 21401-1991, Tel. 3247; †Box 110 Holly Springs Rd., Nanjemoy, MD 20662, 246-4922.

Littrell, George H. Jr., Legislative District 04A, Frederick County, ECM; (D) *209 H.O.B., Annap., 21401-1991, Tel. 3107; †5209 Reel's Mill Road, Frederick, MD 21701, 662-4367.

Long, Daniel M., Legislative District 38, Somerset, Wicomico & Worcester, JUD; (D) *121 H.O.B., Annap., 21401-1991, Tel. 3488; †Box 220, Westover, MD 21871, 543-1300.

Lutz, Joseph V., Legislative District 35A, Harford County, ECM; (D) *151 H.O.B., Annap., 21401-1991, Tel. 3289; †1604 Churchville Road, Bel Air, MD 21014, 838-0900.

MacKinnon, Anne, Legislative District 22, Prince George's County, CAL; (D) *207 H.O.B., Annap., 21401-1991, Tel. 3058; †6363 67th Place, Riverdale, MD 20737, 858-3058.

Maddox, E. Farrell, Legislative District 06, Baltimore County, JUD; (D) *303 H.O.B., Annap., 21401-1991, Tel. 3384; †5807 Pinehill Drive, White Marsh, MD 21162, 391-7800.

Maloney, Timothy F., Legislative District 21, Prince George's County, APP; (D) *424 H.O.B., Annap., 21401-1991, Tel. 3315; †424 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 858-3315.

Masters, Kenneth H., Legislative District 12, Baltimore County, JUD; (D) *121 H.O.B., Annap., 21401-1991, Tel. 3488; †1809 Edmondson Avenue, Catonsville, MD 21228; 747-0407.

Matthews, Richard C., Legislative District 05A, Carroll County, JUD; (R) *306 H.O.B., Annap., 21401-1991, Tel. 3371; †1309 Taylor Street, Hampstead, MD 21074, 239-7600.

McCaffrey, William R., Legislative District 27, Prince George's County, ENV; (D) *161 H.O.B., Annap., 21401-1991, Tel. 3534; †12405 Lytton Avenue, P.O. Box 209, Brandywine, MD 20613, 372-6786.

McClellan, James E., Legislative District 03B, Frederick & Washington Cos., APP; (D) *324 H.O.B., Annap., 21401-1991, Tel. 3240; †215 Rockwell Terrace, Frederick, MD 21701, 662-3804.

Menes, Pauline H., Legislative District 21, Prince George's County, JUD; (D) *210 H.O.B., Annap., 21401-1991, Tel. 3114; †3517 Marlbrough Way, College Park, MD 20740; 935-6270.

Miller, Juanita, Legislative District 25, Prince George's County, ECM; (D) *203 H.O.B., Annap., 21401-1991, Tel. 3076; †P.O. Box 226, Suitland, MD 20746, 772-2537.

Minnick, Joseph J., Legislative District 07, Baltimore County, JUD; (D) *305 H.O.B., Annap., 21401-1991, Tel. 3334; †1702 Stokesley Road, Baltimore, MD 21222, 284-4929.

Mitchell, R. Clayton Jr., Legislative District 36, Caroline, Cecil, Kent, Queen Anne's & Talbot Counties; (D) *H100 STATE HOUSE, Annap., 21401-1991, Tel. 3800; †101 State House, State Circle, Annapolis, MD 21401-1991, 841-3800.

Montague, Kenneth C. Jr., Legislative District 44, Baltimore City, JUD; (D) *301 H.O.B., Annap., 21401-1991, Tel. 3257; †1532 Havenwood Road, Northwood Shopping Center, Baltimore, MD 21218, 243-3904, 539-3800.

Morsberger, Louis P., Legislative District 12, Baltimore County, ECM; (D) *304 H.O.B., Annap., 21401-1991, Tel. 3378; †612 Hilton Avenue, Catonsville, MD 21228, 747-0407.

Munson, Donald F., Legislative District 02C, Washington Counties, ECM; (R) *422 H.O.B., Annap., 21401-1991, Tel. 3447; †28 West Church Street, Hagerstown, MD 21740, 791-4511.

Murphy, Margaret H., Legislative District 41, Baltimore City, ENV; (D) *314 H.O.B., Annap., 21401-1991, Tel. 3283; †4811 Liberty Heights Avenue, Baltimore, MD 21207-7193, 367-5811.

Murray, Ethel Ann, Legislative District 35B, Cecil County, ECM; (D) *403 H.O.B., Annap., 21401-1991, Tel. 3444; †553 Jackson Hall School Rd., Elkton, MD 21921, 398-2040.

Owings, George W. III (D), Legislative District 29, Anne Arundel, Calvert, St. Mary's Counties, CAL; (D) *217 H.O.B., Annap., 21401-1991, Tel. 3231; †Box 3, Route 778, Owings, MD 20736, 855-4100.

O'Malley, Joseph W., Legislative District 47, Baltimore City, ECM; (D) *322 H.O.B., Annap., 21401-1991, Tel. 3319; †604 Jeffrey Street, Baltimore, MD 21225, 355-4376.

Palumbo, Richard A., Legislative District 22, Prince George's County, JUD; (D) *207 H.O.B., Annap., 21401-1991, Tel. 3058; †4004 St. Barnabas Road, Suitland, MD 20746, 423-8300.

Parham, Samuel, Legislative District 41, Baltimore City, CAL; (D) *314 H.O.B., Annap., 21401-1991, Tel. 3283; †4811 Liberty Hgts. Ave., Baltimore, MD 21207, 367-7455.

Perkins, Anne Scarlett, Legislative District 44, Baltimore City, CAL; (D) *141 H.O.B., Annap., 21401-1991, Tel. 3257; †1532 Havenwood Road, Northwood Shopping Center, Baltimore, MD 21218, 243-3904.

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Petzold, Carol S., Legislative District 19, Montgomery County, CAL; (D) *225 H.O.B., Annap., 21401-1991, Tel. 3090; †14113 Chadwick Lane, Rockville, MD 20853, 871-7413.

Pilchard, Shirley, Legislative District 38, Somerset, Wicomico & Worcester, JUD; (D) *413 H.O.B., Annap., 21401-1991, Tel. 3431; †RFD #3, Box 100, Pocomoke, MD 21851, 632-0473.

Pinsky, Paul, Legislative District 22, Prince George's County, ENV; (D) *207 H.O.B., Annap., 21401-1991, Tel. 3058; †6205 Inwood Street, Cheverly, MD 20785, 772-1287.

Pitkin, Joan B., Legislative District 23, Prince George's County, ENV; (D) *208 H.O.B., Annap., 21401-1991, Tel. 3098, Mary Randleman, 449-6382; †208 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3098, 262-0538.

Poole, D. Bruce, Legislative District 03A, Washington Cos., JUD; (D) *319 H.O.B., Annap., 21401-1991, Tel. 3451; †24 Jonathan Street, Suite 207, Hagerstown, MD 21740, 739-6409.

Rawlings, Howard P., Legislative District 40, Baltimore City, APP; (D) *131 H.O.B., Annap., 21401-1991, Tel. 3407; †3502 Sequoia Avenue, Baltimore, MD 21215, 466-4224.

Rehrmann, Eileen M., Legislative District 34, Harford County, APP; (D) *326 H.O.B., Annap., 21401-1991, Tel. 3289; †103 North Main Street, Bel Air, MD 21014, 838-0123.

Roesser, Jean W., Legislative District 15, Montgomery County, CAL; (R) *220 H.O.B., Annap., 21401-1991, Tel. 3090; †10830 Fox Hunt Lane, Potomac, MD 20854, 299-9046.

Rosapepe, James C., Legislative District 21, Prince George's County, W&M; (D) *210 H.O.B., Annap., 21401-1991, Tel. 3114; †210 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3114.

Rosenberg, Samuel I., Legislative District 42, Baltimore City, APP; (D) *320 H.O.B., Annap., 21401-1991, Tel. 3297; †6609 Reisterstown Rd., Suite 104, Baltimore, MD 21215, 764-3614.

Ryan, Charles J., Legislative District 23, Prince George's County, APP; (D) *131 H.O.B., Annap., 21401-1991, Tel. 3407; †131 Lowe House Off. Bldg., 6 Gov. Bladen Boulevard, Annapolis, MD 21401-1991, 841-3407.

Rynd, Richard, Legislative District 11, Baltimore County, APP; (D) *310 H.O.B., Annap., 21401-1991, Tel. 3342; †8570 Leisure Hill Drive, Baltimore, MD 21208, 484-0426.

Sauerbrey, Ellen R., Legislative District 10, Baltimore County, W&M; (R) *312 H.O.B., Annap., 21401-1991, Tel. 3401; †4122 Sweet Air Road, Baldwin, MD 21013, 592-2200.

Scannello, Patrick C., Legislative District 32, Anne Arundel County, ECM; (D) *214 H.O.B., Annap., 21401-1991, Tel 3233; †114 Vernon Avenue, Glen Burnie, MD 21061, 768-5678.

Schmincke, George T., Legislative District 32, Anne Arundel County, ENV; (D) *214 H.O.B., Annap., 21401-1991, Tel. 3233; †108 Chalmers Avenue, Glen Burnie, MD 21061, 768-7773.

Shapiro, David B., Legislative District 42, Baltimore City, JUD; (D) *320 H.O.B., Annap., 21401-1991, Tel. 3297; †6609 Reisterstown Road, Suite 104, Baltimore, MD 21215, 764-3614.

Sher, Patricia R., Legislative District 18, Montgomery County, ECM; (D) *220 H.O.B., Annap., 21401-1991, Tel. 3045; †1916 Rookwood Road, Silver Spring, MD 20910, 589-7188.

Slade, John F., III, Legislative District 29C, St. Mary's County, ENV; (D) *217 H.O.B., Annap., 21401-1991, Tel. 3314; †P.O. Box 20, Valley Lee, MD 20692, 475-5151.

Smith, Elizabeth S., Legislative District 33, Anne Arundel County, W&M; (R) *215 H.O.B., Annap., 21401-1991, Tel. 3223; †3438 Merrimac Road, Harbor Hills, Davidsonville, MD 21035, 269-0724.

Smith, Royd R., Legislative District 03B, Frederick & Washington Cos., ENV; (D) *324 H.O.B., Annap., 21401-1991, Tel. 3240; †P.O. Box 311, No. 2, South Wisner Rd., Frederick, MD 21701, 695-4303.

Sprague, Michael J., Legislative District 28A, Charles, W&M; (D) *216 H.O.B., Annap., 21401-1991, Tel. 3247; †P.O. Box 37, Bryans Road, MD 20616, 375-7995.

Taylor, Casper R. Jr., Legislative District 02A, Allegany & Washington Cos., ECM; (D) *151 H.O.B., Annap., 21401-1991, Tel. 3519; †316 Prince George's Street, Cumberland, MD 21502, 724-9234.

Teitelbaum, Leonard H., Legislative District 19, Montgomery County, ENV; (D) *224 H.O.B., Annap., 21401-1991, Tel. 3046; †11805 Auth Lane, Silver Spring, MD 20902, 921-8282.

Thomas, Virginia M., Legislative District 13A, Howard County, ENV; (D) *219 H.O.B., Annap., 21401-1991, Tel. 3205; †6153 Forty Winks Way, Columbia, MD 21045; 730-0485.

Toth, Judith C., Legislative District 15, Montgomery County, ENV; (D) *225 H.O.B., Annap., 21401-1991, Tel. 3037; †P.O. Box 130, Germantown, MD 20874, 428-3056.

Vallario, Joseph F. Jr., Legislative District 27, Prince Geroge's County, JUD; (D) *206 H.O.B., Annap., 21401-1991, Tel. 3083; †5210 Auth Road, 6th Floor, Suitland, MD 20746-4325, 423-8100.

Weir, Michael H., Legislative District 06, Baltimore County, ENV; (D) *303 H.O.B., Annap., 21401-1991, Tel. 3384; †418 Eastern Boulevard, Baltimore, MD 21221, 391-7800.

Weisengoff, Paul E., Legislative District 47, Baltimore City, W&M; (D) *322 H.O.B., Annap., 21401-1991, Tel. 3319; †1904 Griffis Avenue, Baltimore, MD 21230, 644-6144.

Wiser, C. Lawrence, Legislative District 18, Montgomery County, ECM; (D) *223 H.O.B., Annap., 21401-1991, Tel. 3028; †12702 Littleton Street, Silver Spring, MD 20906, 949-7870.

Wood, John F. Jr., Legislative District 28B, Charles & St. Mary's Cos., ECM; (D) *216 H.O.B., Annap., 21401-1991, Tel. 3247; †Route 8, Box 10, Mechanicsville, MD 20659, 884-2345.

Woods, Sylvania W. Jr., Legislative District 24, Prince George's County, CAL; (D) *201 H.O.B., Annap., 21401-1991, Tel. 3074; †5611 Landover Road, Mitchell Bldg.—2nd Floor, Hyattsville, MD 20784-1244, 277-7503.

Workman, Betty, Legislative District 01B, Allegany Counties, CAL; (D) *319 H.O.B., Annap., 21401-1991, Tel. 3462; †65 Lavale Court, Cumberland, MD 21502, 729-2041.

Editors Note: The preceding directory of 1990 Maryland delegates and senators was provided to members by MPhA Legislative Consultant Robin Shaivitz. Ms. Shaivitz is retained by your professional organization to represent our interests in Annapolis and has been instrumental in our continued successes.

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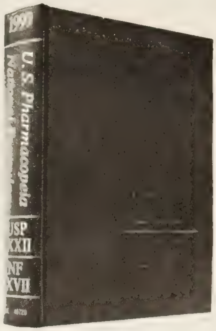

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The Maryland Pharmacists Association 1990 Mid-Year Seminar

February 11, 1990 Ramada Inn, Annapolis

PROGRAM

8:00 am	Continental Breakfast Registration
8:45 am	Presidential Welcome Nathaniel Futeral, P.D.
9:00 am	Continuing Education Seminar *New Drug Update for 1990* presented by: Richard Wuest, Pharm.D. Thomas A. Gossel, Ph.D.
12:30 pm	Luncheon MPhA House of Delegates Meeting Murhl Flowers, P.D. Speaker of the House presiding
2:00 pm	*New Drug Update for 1990* continued
4:00 pm	Wine & Cheese Reception

REGISTRATION

Registration is $35 for MPhA members, ($40 for non-members) if received before January 26, 1990. Registration received after January 26, 1990 and on-site will be $40 for MPhA members ($50 for non-members).

To register for the Mid-Year Educational Seminar complete and detach the accompanying registration form. Return the form with payment (check or money order) to the MPhA office. For further information or questions, contact MPhA at (301) 727-0746 or (800) 833-7587.

1990 MPhA Mid-Year Education Seminar
February 11, 1990
Annapolis Ramada Inn, Annapolis

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ASPL SEMINAR

Third Party Reimbursement and Antitrust Law

March 9, 1990

Ramada Renaissance Techworld Hotel, Washington, D.C.

Learn about Fair Prices, Buying Groups, Antitrust Penalties, Negotiations and Insurance Costs.

SCHEDULE

Registration
8:15 a.m. Till Noon

8:45 - Welcome and Introductions
William J. Skinner, Esq.
President, ASPL, Program Chair
Gary L. Yingling, Esq. - Moderator
McKenna, Connor & Cuneo

Overview of Antitrust Law and Reimbursement
Robert Taylor, Esq.
Madison, Pillsbury & Sutro

FTC Enforcement
Terry Winslow, Esq., Deputy Director
Bureau of Competition

Antitrust Law Enforcement
Fred Haynes, Esq.

State Role in Antitrust Enforcement
J. Joseph Curran, Jr., Esq.
Attorney General of Maryland

Break: Coffee - Juice - Donuts

Second Session
S. John Byington, Esq. - Moderator
Madison, Pillsbury & Sutro

Reimbursement Pricing Decisions: How Made
Ms. Carron Maxwell
BC/BS Association

Pharmacists Participation in Third Party Programs: How to Deal
Lou Sesti, R. Ph.
Michigan Pharmacists Association

A Waiver from Antitrust Laws for Small Independent Pharmacists
Kyo Jhin, Ph.D
Advocate for Small Business, SBA

Congress and Fairness to Pharmacists and Other Health Care Providers
Senator Slade Gorton (Invited)

2:00 - Adjournment

REGISTRATION INFORMATION

Tuition: Includes admission to the program and coffee break. On-site registration (999 9th Street, N. W.) will be available from 8:15 a.m. to 12:00 noon on March 9, 1990, for an additional fee of $25. Please call the ASPL [(301) 762-3786] at least 72 hours in advance to confirm that space is available.

Cancellations: Requests for refunds must be made in writing. Refunds for cancellation received after February 20 will be reduced by a non-refundable administrative fee of $25. Registrants who do not attend the program but fail to cancel beforehand are liable for the entire fee. Substitute registrants of the same category are always welcome.

Hotel Accommodations: A block of rooms has been reserved at the Ramada Renaissance Techworld in Washington for March 8 at the convention rate of $125 single and $145 double. If you wish to make reservations at the ASPL special rate, please call ASPL [(301) 762-3786] to request a reservation card.

Program Committee

S. John Byington
Paul T. Cuzmanes
Francis B. Palumbo
Gary L. Yingling
Paul A. Pumpian
Robert G. Pinco
William J. Skinner, Chairman

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☐ $ 50 Government Employees
☐ $ 25 Students with ID

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ADVANCE REGISTRATION DEADLINE
February 20, 1990

☐ Please also send me information on the ASPL Annual Meeting Program on March 10-12, 1990. No registration fee, except to attend concurrent meeting of American Pharmaceutical Association.

Please register the following persons:

Name: ____________________
Firm/Agency: ____________________
Address: ____________________
City: ____________________ State: __________
Zip: __________ Phone: __________

obviously. We did see evidence of public use of marijuana. The medical people we spoke to admitted this was a problem, but not on the scale it is in the West. Treatment is very limited and the responsibility of the family.

Most Americans are already aware that alcoholism is a problem in the Soviet Union—it has affected production in the factories and farms and has destroyed families. (Sound familiar?) There is much resistance to prohibition and it isn't working there just as it didn't work here. Bootlegging is a big business putting a strain on corn, grain and sugar supplies. (Sugar is rationed in Moscow).

The pharmaceutical industry is very small and erratic. Birth control pills are unreliable and scarce. Most women try to get them from East Germany or the West. Otherwise, abortion is the major method of birth control—about six per woman average. Prophylactics and diaphragms are practically nonexistent and not very reliable in quality. Prostitution is a problem especially in the big cities. This doesn't help the venereal disease situation. Since prostitution is illegal and has been hushed up for eighty years, not much is known about statistics in this area of public health.

We would like to make arrangements for some Russian pharmacists to visit our country and we are actively seeking a sponsor or sponsors. International exchange of information is important to all of us as it prevents misunderstandings and educates all who are touched by it. If you are interested in helping us implement this exchange program, contact us through the Maryland Pharmacist Association.

Do svidaniya!

Richard Baylis, P.D. is a clinical pharmacist with HMIS in Timonium, Maryland. He is a graduate of Albany College of Pharmacy, Union University in Albany, New York. He is a member of the MPhA Region One DUR Committee.

Fira Malykin, a graduate of the Medical School (pharmacy) in Mogelov, Byelorussia is a pharmacist assistant at HMIS-Levindale. Her assistance with this article is greatly appreciated.

Things You Should Know FOR YOUR GOOD HEALTH

Fever Blisters and Canker Sores

Fever blisters and canker sores are found in or around the mouth and have very similar symptoms; therefore, they are often assumed to be the same thing when, in fact, they are not.

Unlike canker sores, fever blisters are contagious and are associated with fever, halitosis (bad breath), swollen neck glands, increased salivation, and general malaise. Canker sores appear as gray to grayish-yellow lesions surrounded by red inflamed tissue and can be found through-out the oral cavity. However, fever blisters appear as white ulcers which may or may not be surrounded by red inflamed tissue and can be found through-out the oral cavity, but are usually located on or around the lips.

The exact cause of canker sores is not known; however, they may be due to a type of streptococcal bacteria. Fever blisters are caused by the herpes simplex type I virus, not to be confused with the type II virus which is responsible for genital herpes.

Fever blisters and canker sores are similar in that they are painful, cosmetically unappealing, and recurrent, often appearing in the same location. The number of lesions and rate of recurrence varies widely from person to person. Both types of lesions are self-limiting and usually heal without scaring in 10-14 days. Unfortunately, nothing can be done to make the lesions heal any faster; however, it is possible to relieve the pain and reduce chances of infection.

Canker Sores

The use of topical anesthetic pastes or gels is the most effective way to treat the pain of canker sores. Aspirin or acetominophen can also be used but they are less effective and have a greater potential for systemic side effects and drug interactions. A typical home remedy for canker sores is to place an aspirin directly on the lesion until the aspirin dissolves. However, aspirin *SHOULD NOT* be held within the oral cavity as this has been known to cause "aspirin burn" which damages the surrounding tissue. Canker sores may be associated with certain predisposing factors, such as stress, foods, or trauma to the lips or mouth (i.e. loose fitting dentures). Removing these predisposing factors may aid in preventing canker sores.

Fever Blisters

It is important to keep fever blisters moist to prevent drying and cracking, since cracking may lead to infection, delayed healing, and additional pain. Therefore, highly astringent products, such as rubbing alcohol, should be avoided. Bland emollient creams or petrolatum will help keep the lesion moist. Ointments and creams containing local anesthetics may provide additional pain relief. Fever blisters associated with sun exposure may be prevented or relieved with the use of a sunscreen in "chapstick" form.

Cautions

Canker sore and fever blister medications that are taken by mouth are available; however, none of these agents have been proven to be effective. Topical counterirritants and steroid ointments may cause additional irritation and should not be used unless otherwise directed by your physician or pharmacist.

If canker sore or fever blister lesions are not healed within 2 weeks, there is persistent bleeding or swelling, or if you have any endorine disorders (i.e. diabetes or hypothyroidism), take any medications (especially antibiotics, corticosteroids, or immunosuppressive agents), had recent surgery, or are pregnant, notify your pharmacist.

Before purchasing any non-prescription medications *ASK YOUR PHARMACIST*. Your pharmacist is trained to evaluate your individual needs and recommend appropriate, safe treatment. It's For Your Good Health!

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1990 TAX DATES

The following are due dates for federal and state taxes that will most likely affect you or your organization. Taxes that are due four or more times during the year are identified by abbreviations explained below the chart.

Prepared as a courtesy to Maryland Pharmaceutical Association Members, by *C. W. AMOS & COMPANY,* Certified Public Accountants with offices in Annapolis (266-9396), Baltimore (727-5341), Bethesda (654-3044), Cambridge (228-7400), Centreville (758-0772), Easton (820-6861), and Salisbury (742-1328).

January 1990

Thursday, January 4	FD(a)
Tuesday, January 16	FD(b),FI/SI
Monday, January 22	ST
Wednesday, January 31	FQ,FU,FD(c),SQ,SU Employee's statements W-2 for amounts withheld in 1989 to be furnished by employer. Employer file federal unemployment tax Form 940 for 1989.

February 1990

Monday, February 5	FD(a)
Thursday, February 15	FD(b)
Wednesday, February 21	ST
Wednesday, February 28	Forms W-2 "A" copies with transmittal form W-3 filed with Social Security Administration.

March 1990

Monday, March 5	FD(a)
Thursday, March 15	FD(b) Federal and state corporate income tax return due or you must pay estimated amount due and file for automatic 6 month extension. Interest will be paid on amount paid after March 16.
Wednesday, March 21	ST

April 1990

Wednesday, April 4	FD(a)
Monday, April 16	FD(b),FC,FI/SI,SC Federal and State Individual Income Tax due or you must pay estimated amount due and file for an automatic four month extension. Interest will be paid on amount paid after April 17. State personal property tax due.
Monday, April 23	ST
Monday, April 30	FQ,FU,FD(c),SQ,SU

May 1990

Thursday, May 3	FD(a)
Tuesday, May 15	FD(b)
Monday, May 21	ST

June 1990

Tuesday, June 5	FD(a)
Friday, June 15	FD(b),FC,SC,FI/SI
Thursday, June 21	ST

July 1990

Thursday, July 5	FD(a)
Monday, July 16	FD(b)
Monday, July 23	ST
Tuesday, July 31	FQ,FU,FD(c),SQ,SU

August 1990

Friday, August 3	FD(a)
Wednesday, August 15	FD(b) Last day for filing tax return or obtaining additional 2 month extension by individuals who obtained an automatic 4 month extension
Tuesday, August 21	ST

September 1990

Thursday, September 6	FD(a)
Monday, September 17	FD(b),FC,FI/SI,SC Last day for filing tax return by calendar corporations that obtained an automatic 6 month extension
Friday, September 21	ST

October 1990

Wednesday, October 3	FD(a)
Monday, October 15	FD(b) Last day for filing tax return by individuals who obtained additional 2 month extension in August.
Monday, October 22	ST
Wednesday, October 31	FQ,FU,FD(c),SQ,SU

November 1990

Monday, November 5	FD(a)
Thursday, November 15	FD(b)
Wednesday, November 21	ST

December 1990

Wednesday, December 5	FD(a)
Monday, December 17	FD(b),FC,SC
Friday, December 21	ST

FD(a)	Last payment due on federal income and social security taxes withheld during the previous month if over $3,000 was withheld. You are required to deposit the amount withheld within 3 banking days after you reach $3,000 at the end of any eighth-monthly period (these periods end on the 3rd, 7th, 11th, 15th, 19th, 22nd, 25th, and last day of the month).
FD(b)	Federal income and social security taxes withheld must be deposited by this date if between $500 and $3,000 was withheld during the previous month. Earlier deposit is required when $3,000 is reached prior to this date.
FQ	Federal quarterly income and social security taxes withheld must be paid.
FU	Federal unemployment tax must be paid.
FC	Federal estimated corporation taxes must be paid if on calendar basis (note—fiscal year corporations pay this tax on 15th day of 4th, 6th, 9th, and 12th month of their year).
FI/SI	Federal and state estimated individual tax for previous quarter due.
FD(c)	Federal social security and withholding tax due on domestic workers.
ST	Maryland state sales tax due.
SQ	Maryland state income tax withheld due for previous quarter.
SU	Maryland state unemployment taxes due.
SC	Maryland state estimate of corporation tax due.

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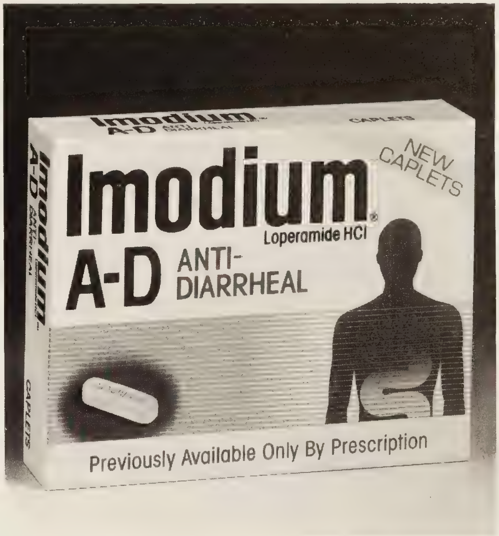
Rubex
50 mg

Bristol-Myers Oncology Division has announced that several of its products will be sold with CytoGuard, a new safety device that reduces the possibility of aerosolization of cytotoxic drugs during reconstitution. CytoGuard was designed to protect nurses and pharmacists working with cytotoxic agents.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Continuing Education Quiz

The Maryland Pharmacist **JANUARY, 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by May 31, 1990. A continuing education certificate for one contact credit) will be mailed to you within 30 days. Please type or print clearly.

Name ____________________

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Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? __________ minutes

OTC Ophthalmic Products

1. FDA has ruled which of the following as a safe and effective OTC astringent?
   a. Calcium sulfate
   b. Magnesium sulfate
   c. Sodium sulfate
   d. Zinc sulfate

2. Of the five tissue layers comprising the cornea:
   a. all five layers are hydrophilic.
   b. all five layers are lipophilic.
   c. the innermost and outermost are hydrophilic; the midsections are lipophilic.
   d. the innermost and outermost are lipophilic; the midsections are hydrophilic.

3. Which of the following is most suitable for use alone as a vehicle for eye ointments?
   a. Lanolin
   b. Petrolatum
   c. White wax
   d. Paraffin

4. FDA considers all of the following to be self-treatable conditions EXCEPT:
   a. corneal edema.
   b. minor inflammation.
   c. pink eye.
   d. tear deficiency.

5. Polyvinyl alcohol is a/an:
   a. astringent.
   b. buffering agent.
   c. demulcent.
   d. vasoconstrictor.

6. Hyperemia refers to excessive:
   a. mydriasis.
   b. blood flow.
   c. glucose.
   d. urination.

7. All of the following are approved for OTC sale in relieving redness of the eye due to minor irritations EXCEPT:
   a. naphazoline.
   b. oxymetazoline.
   c. phenylpropanolamine.
   d. tetrahydrozoline.

8. The cornea contains:
   a. numerous nerve fibers and no blood vessels.
   b. numerous blood vessels and no nerve fibers.
   c. numerous blood vessels and nerve fibers.
   d. neither nerve fibers nor blood vessels.

9. The innermost layer of tear film is referred to as the:
   a. aqueous layer.
   b. lipid layer.
   c. mucin layer.

10. Of the following, the best type of eye preparation to use in treating corneal edema is a/an:
    a. isotonic agent.
    b. hypertonic agent.
    c. hypotonic agent.

Classified

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THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Santi V. Lusco at 254-1772.

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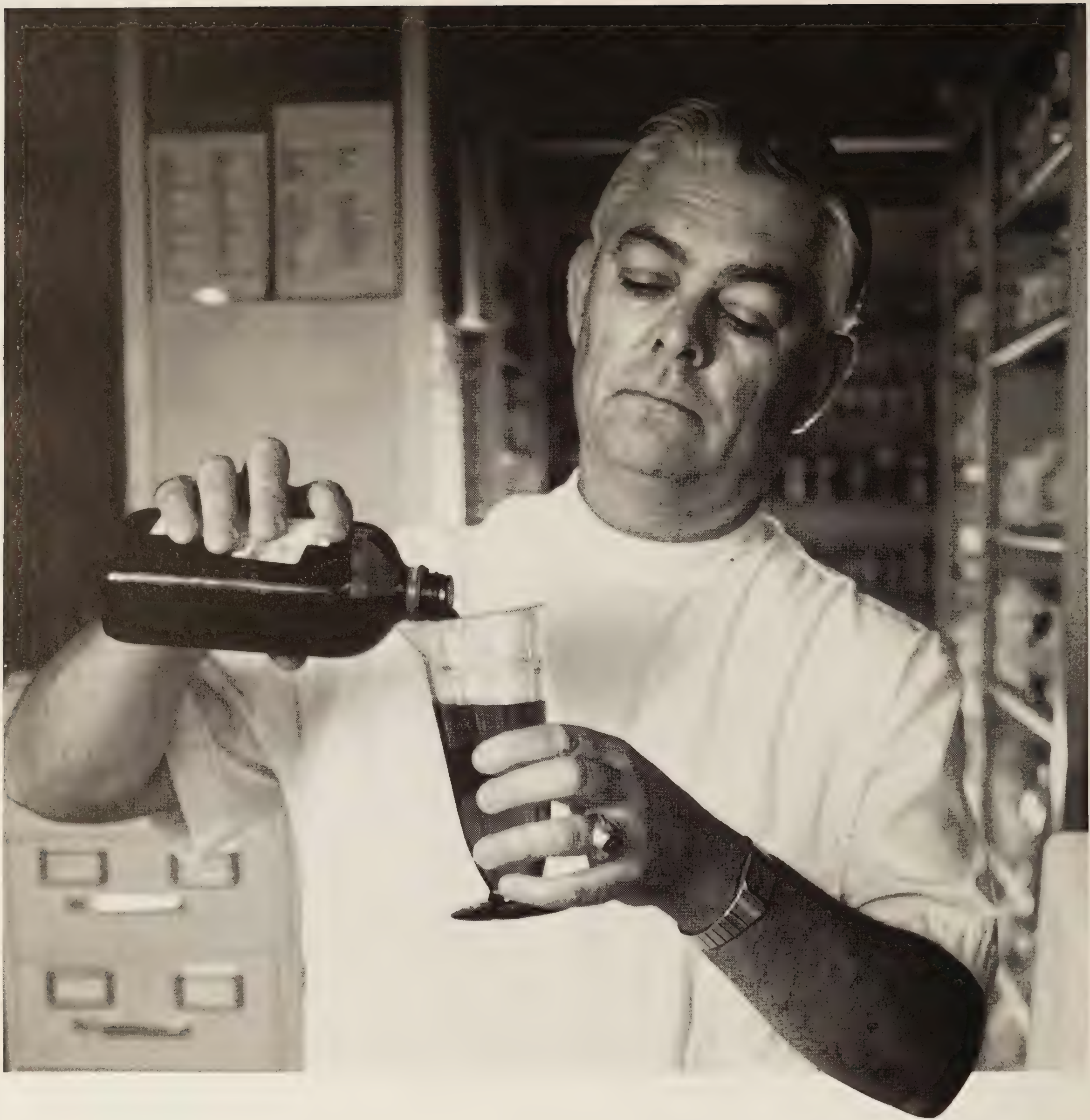

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The Maryland Pharmacist

VOL. 66 FEBRUARY, 1990 NO. 2

UNIVERSITY OF MARYLAND AT BALTIMORE
SCHOOL OF PHARMACY

The Move to All-Pharm.D.
A Report From the School

THE MARYLAND PHARMACIST

650 WEST LOMBARD STREET
BALTIMORE MARYLAND 21201
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Giving Away The Store?

Would you give away a handful of antibiotics to a patient without a prescription? without collecting payment for it? Would you invite people in off the street to help themselves to anything on your shelves? *Of course not!*

But that's what pharmacists everywhere seem to be doing when it comes to government intervention in the profession—happily surrendering control over pharmacy to anyone and everyone with a ''quick fix'' idea to solve the world's problems.

If you've been following the national pharmacy press, you already know that a resolution supporting mandatory patient counseling was passed by the NARD House of Delegates without even a whimper. Other states are jumping on the bandwagon, requiring patient profile systems, drug interaction screenings, triplicate prescriptions, and patient counseling.

Considered by themselves, each of these seems to be a good idea. Patient profiles ostensibly protect the public. Mandatory patient counseling is a clever way to limit those ''evil'' mail-order prescription programs. Triplicate prescriptions are intended to curb drug diversion.

Pharmacy is already the most heavily regulated health profession. Do we need more legislation, more regulation, more definitions, or more government encroachment? The next time you hear of another regulatory ''quick-fix'' idea, think about what it means to the sovereignty of pharmacy. Think about this: ''As a licensed professional, don't I have the knowledge and skill to determine what my practice of pharmacy shall be.''

If not, then we and the profession are lost.

Nathaniel Futeral, P.D.

President

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Nicotine Addiction: Counseling Patients on Withdrawal

by Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology
and Toxicology
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Ada, Ohio

and

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Cincinnati, Ohio

Goals

The goals of this lesson are to:

1. discuss the relationship between smoking and disease processes; and
2. describe the use of nicotine gum and OTC smoking deterrent products, and
3. discuss the utility of the nicotine gum product in structured smoking cessation programs.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from

Merrell Dow U.S.A. & Lakeside Pharmaceuticals
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Gossel

Wuest

Objectives

At the conclusion of this lesson, participants should be able to:

1. exhibit an understanding of the relationship between smoking and various pathologies;
2. cite the evidence for nicotine in causing addiction, and list symptoms of withdrawal;
3. select the ingredients of OTC smoking deterrent products and discuss their actions and effectiveness;
4. choose from a list the composition, method of correct use, efficacy rate, and adverse effects of the nicotine gum product; and
5. demonstrate knowledge of important points to convey when counseling consumers on smoking cessation programs.

More than 320,000 Americans will die prematurely this year. They will die from pulmonary and cardiovascular disease, cancer, or other smoking-related pathologies.

Smoking is the SINGLE GREATEST PREVENTABLE CAUSE of morbidity and mortality in the U.S. Deaths from smoking exceed all other causes combined from alcohol, automobile and airline accidents, and AIDS.

Smoking also costs in wasted dollars. The U.S. Congress Office of Technology Assessment estimates that the annual loss to the U.S. economy from illness and premature death due to smoking is a staggering $38 to $95 billion.

The number of cigarette smokers in the U.S. has decreased over the past 25 years since the first Surgeon General's Report on the Health Consequences of Smoking. While there are now about 40 million ex-smokers, more than 50 million Americans still smoke.

Furthermore, smokers represent an increasingly greater percentage of heavy tobacco users (identified as those who smoke more than 25 cigarettes per day). This percentage may continue to increase with time, as more and more smokers who are not heavy tobacco users (15 or fewer cigarettes per day) quit smoking.

It is tougher for heavy smokers to quit. Withdrawal symptoms from nicotine (Table 1) are more intense for heavy smokers. Their craving for tobacco and urge to smoke is much stronger.

Sadly, two-thirds of all smokers begin before age 18. It is estimated that 4000 teenagers under age 17 begin smoking each day.

Ninety percent of smokers say they would like to quit. Sixty percent have tried. . .at least once! Twenty percent of those who try may succeed on their first attempt. By their seventh try, nearly 40 percent will have succeeded. The term *recidivism* describes a person's inability to refrain from smoking after a period of abstinence.

Table 1

Symptoms of Nicotine Withdrawal
• Craving for cigarettes/tobacco
• Anxiety, restlessness
• Frustration, anger
• Bradycardia, palpitations
• Difficulty in concentrating
• Increased appetite
• Lightheadedness

The tobacco industry attempts to protect its sales as best it can. Approximately $2.5 billion each year is reportedly spent on advertising and promotion of smoking.

Nicotine Addiction

The 20th (1988) Surgeon General's Report on "The Health Consequences of Smoking: Nicotine Addiction" stressed that tobacco addiction is the major cause of chemical dependence of Americans. Psychological and behavioral aspects of smoking meet the same classic criteria for true addiction to opiates and other known causes of chemical dependence. Tolerance develops with continued use, and there is a tendency to increase usage. Withdrawal also elicits profound physical and psychological symptoms.

Withdrawal from nicotine may produce a wide array of symptoms ranging in severity from mild discomfort to incapacitation. It is equally as predictable with physical signs, and behavioral, electrophysiologic, and neurochemical outcomes, as seen for withdrawal from opioids and central sedatives.

Tobacco Use: Facts and Fallacies

Nicotine inhaled from smoking tobacco is absorbed into the blood almost immediately. Studies have demonstrated that less than seven seconds elapse from inhalation of smoke, to chemical binding of nicotine with receptors in the brain.

Approximately 25% of inhaled nicotine is delivered to the brain. Following binding with nicotine receptors, it activates the release of norepinephrine, antidiuretic hormone, and possibly other neurotransmitters within the central nervous system (CNS). Cortisone is released from the adrenals. Blood pressure, heart rate, and breathing frequency are therefore increased. The remaining 75% of absorbed nicotine is delivered directly to peripheral sites where it stimulates the nervous system and adds to the central actions. Blood pressure and heart rate are therefore increased even more.

Nicotine is only one of the toxic components of tobacco. There are at least 4000 other potentially harmful chemicals present in tobacco smoke. These include cyanides, carbon monoxide, aldehydes, nitrogen oxides, and tars. Particulate matter in smoke can damage the lungs. Furthermore, the high temperature of inhaled smoke, or of a pipe-stem held in prolonged contact with the lips or oral mucosa can incite morphologic damage.

Ironically, **pipe smoking** may be potentially more damaging than cigarette use. Pipe smokers who inhale absorb significantly more nicotine than cigarette smokers. Pipe bowls contain a large reservoir of tobacco. Pipe smokers keep it lit for longer periods and inhale more deeply than cigarette smokers.

Low-nicotine cigarettes are not safer than traditional cigarettes. Because they deliver less nicotine per inhalation, they encourage the smoker to inhale more often and more deeply in order to receive the expected nicotine rush. Therefore, more nicotine and other harmful components of tobacco are absorbed, than are delivered from traditional cigarettes.

Smokeless tobacco products are especially toxic. These products are held directly against the oral mucosa where nicotine is absorbed quickly. Neoplastic changes to the oral cavity related to the use of smokeless tobacco products have been documented from their use.

Nicotine Gum in Smoking Cessation Programs

The idea for a nicotine-containing chewing gum was based on the premise that smoking is the response to a true physical addiction to nicotine, which involves a complex interaction between psychological and social factors. If a smoker tries to withdraw from nicotine abruptly, he may be overwhelmed by all these forces interacting at once. The prospect of success will therefore be minimized.

By satisfying the smoker's biological requirement for nicotine while gradually reducing its supply, the withdrawal symptoms and associated psychological and social changes will be easier to accept. Moreover, the other harmful aspects of tobacco use besides nicotine, including the pathologic chemicals, particulate matter, and heat will be eliminated during the withdrawal process.

The gum also satisfies the oral gratification that some smokers crave. The user can control the drug's release at any rate he chooses.

The urge to smoke may still occur while undergoing therapy. But these urges should be controllable, and the individual should feel more comfortable than going "cold turkey."

Nicorette (nicotine polacrilex) is the only product currently available that is specifically designed to provide an alternate source of nicotine to help smokers successfully complete a cessation program. The product consists of the natural extract of the tobacco plant, and delivers nicotine to the blood by absorption through the buccal mucosa. It can produce blood concentrations of nicotine similar to smoking, without causing the peak and valley profile characteristic of cigarette smoking. It is the most thoroughly studied method for aiding withdrawal from nicotine. Nicorette requires a prescription for purchase.

A nicotine containing transdermal patch is undergoing clinical trials for future marketing.

Nicorette is intended to be used temporarily, to aid in a structured smoking cessation program. It is not indicated for sporadic use, or as a permanent replacement for smoking. At the same time, some physicians and smokers may reason that prolonged use of the product is less harmful than continued tobacco usage with its wide array of chemical toxins.

Studies have confirmed that one year following smoking cessation, the number of people still abstaining from tobacco will be twice the number as those using a placebo. For example, results of one study demonstrated that 47 percent of Nicorette users, versus 21 percent of a placebo group, were still abstinent one year after treatment.

Smokers should stop smoking completely before initiating Nicorette therapy. The gum should not be used concurrent to smoking as a means to reduce the number of cigarettes smoked. This can lead to higher-than-ever blood levels of nicotine, and increase the incidence of nicotine-related adverse effects. Further, even one cigarette a day reinforces the smoker's psychological

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Table 2

Drugs Reported to Interact with Nicotine

Drug	*Effect on Drug From Smoking*
Acetaminophen	Plasma levels are lower in smokers; some smokers may require higher doses than nonsmokers.
Antidepressants (Tricyclic)	Plasma levels are lower in smokers; some smokers may require higher-than-normal doses.
Benzodiazepines	Drugs are more rapidly eliminated by smokers; sedation is reduced.
Caffeine	Caffeine is eliminated more quickly; smokers receive less CNS stimulation.
Cyanocobalamin	Plasma levels lowered. Effect may be significant in malnourished patients.
Glutethimide	Exact mechanism unknown; CNS depression enhanced.
Lidocaine	Serum protein binding increased about 20%; clinical significance unclear.
Oral contraceptives	Risk of thromboembolic events increased in smokers who smoke more than 15 cigarettes a day, especially after age 35.
Pentazocine	Drug metabolism enhanced; may require additional doses to maintain analgesia.
Phenothiazines	Decreased drug effect has been reported for smokers.
Phenylbutazone	Metabolic clearance nearly doubled by smoking; smokers may need higher-than-normal doses.
Propoxyphene	Decreased drug effect has been reported for smokers, possibly due to enhanced metabolism.
Propranolol	Increased clearance and reduced therapeutic effect reported in smokers.
Theophylline	Half-life decreased; smokers may need to double the dosage.

(Source: Lipman AG: *Modern Medicine*, pp 141–142, August, 1985)

and social behaviors, and total cessation becomes much more difficult.

The gum should be chewed slowly. Nicotine is released from the gum base by contact with saliva. Slow chewing minimizes saliva flow. Hypersalivation enhances the amount of nicotine that will be swallowed. Nicotine that is swallowed in saliva will be absorbed through the hepatic portal system and will undergo rapid metabolism. Thus, only a small amount will reach the systemic circulation.

Each piece of gum contains 2 mg of nicotine bound to an ion exchange resin. The product is buffered to a pH of approximately 8.5 to assure that nicotine remains non-ionized, and hence, maximally absorbed across the oral mucosa.

Adverse Effects. If excessive nicotine is absorbed, adverse effects may be noted. These include abdominal discomfort, nausea and vomiting, headache, dizziness, and palpitations. Toxicity is rare when the gum is used correctly.

Local effects are more common. These include sore jaws from rapid or prolonged chewing, mouth sores and throat tenderness, stomach upset, and hiccups. Jaw soreness can be minimized by chewing the gum less vigorously. The other effects may be due to local action caused by excessive swallowing of nicotine in saliva.

Drug Interactions. Smoking can significantly alter the effectiveness of a number of medications (Table 2). It can also worsen existing health disorders, thereby complicating drug action.

Most altered drug actions result from enhancement of drug metabolism. One group of chemicals in tobacco, the polycyclic aromatic hydrocarbons, are probably responsible. They stimulate hepatic microsomal enzymes that normally detoxify drugs. As a result, smokers require larger doses or more frequent administration of drugs to maintain therapeutic blood levels. The dose of theophylline, for example, may need to be doubled.

Smoking Cessation Programs

The **Fagerstrom Tolerance Test** (Figure 1) measures physiological dependence to nicotine. A smoker can take the test, then visit a physician who will assess the extent of dependence, and motivation for successfully completing a smoking cessation program.

If the smoker who is "trying to quit" is not strongly motivated, cessation is not likely.

The indisputable fact is that actuarial calculations show that quitting smoking adds on average, 10 years of life.

OTC Products

There are two groups of proprietary products that claim to help people withdraw from smoking. The first (e.g., Bantron, Nicoban) contains lobeline sulfate. Lobeline mimics the effects of nicotine on the autonomic nervous system and is intended as a substitute for nicotine.

The second group (e.g., Healthbreak) contains silver acetate. On contact with the oral mucosa, silver acetate imparts an objectionable "metallic-sweet" taste to the mouth when tobacco smoke is inhaled.

Both ingredients are classed by FDA as safe, but neither has been shown to be effective in helping smokers quit.

Advising Patients

Pharmacists are in an excellent position to counsel patients who want to quit smoking. Surveys show that pharmacists are viewed as highly reliable sources of health-related information. More than two-thirds of pharmacists actively encourage smoking cessation. Moreover, consumers have easy access to pharmacists.

It is important for pharmacists to become involved. Positive reinforcement throughout a smoking cessation program will enhance compliance. Compliance will be increased when counsel is given orally, followed by a written summary.

It has been shown that most prescriptions for Nicorette are issued

Nicotine Dependency Test

		A = 0 points	B = 1 point	C = 2 points	Score
1.	How soon after you wake up do you smoke your first cigarette?	After 30 min.	Within 30 min.	-	
2.	Do you find it difficult to refrain from smoking in places where it is forbidden, such as the library, theater, doctor's office?	No	Yes	-	
3.	Which of all the cigarettes you smoke in a day is the most satisfying?	Any other than the first one in the morning	The first one in the morning	-	
4.	How many cigarettes a day do you smoke?	1–15	16–25	More than 26	
5.	Do you smoke more during the morning than during the rest of the day?	No	Yes	-	
6.	Do you smoke when you are so ill that you are in bed most of the day?	No	Yes	-	
7.	Does the brand you smoke have a low, medium, or high nicotine content?	Low (0.4 mg)	Medium (0.5 to 0.9 mg)	High (1.0 mg)	
8.	How often do you inhale the smoke from your cigarette?	Never	Sometimes	Always	
Motivational Questions					
1.	When you make up your mind to do something, do you follow through on it?	Most of the time	Some of the time	Usually not	
2.	Do you find that getting help from family, friends, or professionals has helped you achieve desired goals?	Yes	No	-	

To evaluate your score, please see your doctor.

Scores of 7 or higher: Indicate high nicotine dependence and represent individuals who should be particularly likely to benefit from a smoking cessation program, which includes the treatment of nicotine dependence and the addressing of psychological and social factors that contribute to that smoking habit.

Scores of 6 or less: Suggest a low to moderate nicotine dependence. These individuals may respond to a smoking cessation program that addresses the psychological and social factors that contribute to their smoking habit.

Patient motivation: A positive response to both questions in this section indicates a highly motivated individual, who would make a particularly good candidate for a smoking cessation program.

Figure 1. The Fagerstrom Tolerance Test

with little or no instruction on how to use the product, or counseling on smoking cessation in general. This is a good opportunity for pharmacists to counsel patients on the product specifically, and on smoking cessation and health in general.

When dispensing the product, patients can be asked to try the first piece while still in the pharmacy. In this way the correct usage can be better explained. The first piece of gum may be distasteful; it is bitter, and may irritate the mouth and throat. The user might be discouraged, but can be properly counseled on compliance while still in the pharmacy.

Patients must use Nicorette gum correctly. For instance, drinking soft drinks, coffee, or other beverages while using the gum can prevent the absorption of nicotine from the oral mucosa. That which is swallowed may cause adverse effects such as nausea, and hiccups due to local irritation.

Most people will need 10 to 15 pieces of gum each day for 3 to 6 months while they acclimate to the changeover from smoking. Patients who refuse, or cannot voluntarily decrease their use of Nicorette, should be advised to taper off one piece of gum per day, per week. In other words, a person who uses 12 pieces a day would be completely withdrawn after 12 weeks. Patients should keep the gum handy for emergency use for up to one year. Whenever the urge to smoke reappears, the gum, rather than a cigarette, should be used.

Consumers can be directed to contact the U.S. Department of Health (301-443-1690) for a free copy of a booklet entitled: "State and Local Programs on Smoking and Health." It describes smoking cessation programs available in each state. Pharmacists can also procure booklets directly from the manufacturer (Lakeside Pharmaceuticals, P.O. Box 429553, Cincinnati, OH 45242-9553) of the nicotine gum product to distribute to their patients. These booklets are written in consumer terms, and contain much valuable information.

Dickinson's Pharmacy

by Jim Dickinson

The truth about AWP. So federal Medicaid and a lot of other people want you to discount AWP (Average Wholesale Price). They say it "isn't real."

Some pharmacists are giving in, thinking that:

(1) a little is better than nothing;

(2) professional, service-oriented retail pharmacy is dying out anyway; and

(3) you can't fight city hall (i.e., any big bureaucracy).

But all pharmacists—whether in retail practice or not—should think again about AWP before walking away from it.

It comes from the "good old days" when wholesalers gave pharmacists a lot more services than most do today. They did valuable things that pharmacists have since been forced to do for themselves—like sending salesmen in to check the pharmacy's stock for reorder, waiting 45 days for the pharmacy to pay for stock, and making deliveries to pharmacies every day.

The loss of these and other valuable services to pharmacy is what NARD had in mind when it coined the term, "earned discounts" to describe the difference between published AWPs and actual wholesaler invoices.

The difference is coming out of the pharmacist's hide. It's money he keeps instead of paying to the wholesaler for efforts he takes on for himself, his employees, and his family (not for Uncle Sam!).

NARD and state/local pharmacy associations have been driven to using new terminology like that because, frankly, in some quarters "AWP" has become a dirty word. It's "not real."

Pharmacists who go along with the flight from AWP are not only losing an opportunity to educate bureaucratic infidels, but they are unconsciously helping diminish pharmacy as a real profession—something that should concern all pharmacists, whether in retail practice or not.

The flight from AWP is perceived by Medicaid and other program chiefs as an admission by real-world pharmacists of two things those program chiefs have thought they knew all along:

(1) Pharmacists have been ripping off the programs for years, and

(2) The programs should pay no more than the pharmacy's actual bottom line after all discounts, rebates, and credits of all kinds.

It doesn't take a genius to figure out where that line of thinking leads to, eventually—besides being a confiscation of private property, it leads directly to the already growing suspicion that pharmacy "services" are a scam.

Eighty per cent of the course content in every pharmacy school would be rendered "useless."

Unfortunately, the daily behavior of a minority of pharmacists—now being surveyed by federal Medicaid's Inspector-General, Richard P. Kusserow—supports the suspicion of "useless services." Some pharmacists simply don't even pretend to do anything more than pass a commodity from stock to customer.

There's little reason to think that Kusserow's survey won't seek out those pharmacists in order to make its own contribution to reducing the federal deficit. By substantiating that there are, in the "real world," no pharmacy services worth paying for, Kusserow will be able recommend even bigger forced discounts off AWP.

And the daily AWP behavior a minority of drug companies adds to his case. Last month, a pharmacist out west send me a 3PM print-out showing Geneva Generics' self-established "AWP" for its butalbital/acetaminophen soaring 1,300% in four months, from $3.25 to $24.84, when the actual pharmacy price was $2.93. Naturally, Geneva's director of marketing, Tom Exner, did not return my calls about this—I wanted to know if he realized he was helping to kill pharmacy.

You might pessimistically invoke Thought No. 3 above (that pharmacy can't fight city hall), or even Thought No. 2 (that service-oriented retail pharmacy is dying out)—but you'd be wrong if you did.

"City halls" exist to *be* fought, and every day they are successfully defeated by concerned citizens and pressure groups. It just gets tougher the bigger and more distant they are—but how do you think Medicare catastrophic was defeated?

It *can* be done! Your pharmacy associations know how to do it.

As for service-oriented retail pharmacy dying out, the chain drug store industry doesn't believe that. While like other parts of pharmacy they don't always practice what they preach, the industry's gradual conversion to smaller stores, often with on-line patient profiles and counseling capabilities, is a sign of things to come.

Retail practice is market-driven. If you think your market is federal Medicaid and other programs that demand AWP-less-X, you should be focusing on the sleeping giant that is the real, ultimate market—the patient.

There has to be a way of making the real market see and want pharmacy service. And of preventing the federal government from setting the standards for that service.

This feature is presented on a grant from "Dickinson's Pharmacy—The Independent Voice," an 8-page practical monthly newsletter available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45.

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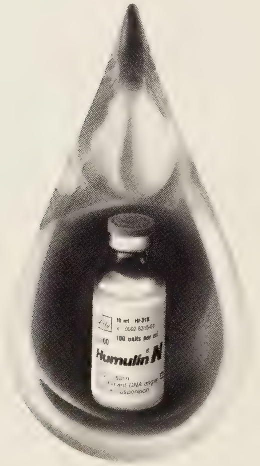

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School Moves to All Doctor of Pharmacy Program

In late November the faculty of the School of Pharmacy decided to begin the transition to a Doctor of Pharmacy program for all our students. This decision was made for several important reasons including the changing nature of drug therapy, the critical role of pharmacists in drug use, and the absolute necessity of our graduates to adapt to future change.

The nature of drug therapy is changing. Recent advances in biology and genetics have been staggering. Biotechnology has helped develop drug therapy undreamed of a decade ago. Drug therapy has always been the most frequently used form of medical intervention. Outpatient prescriptions dispensed through community pharmacies alone exceed 1.6 billion annually. The importance of drug therapy, particularly to ambulatory patients and to the elderly, can only increase in the years to come.

Pharmacy is the profession that must assure that its practitioners provide for the safe, effective and efficient use of drugs in patients. This encompasses the provision of drug therapy and other health-related services in order to improve the health status of all patients. This mission for the profession is critical and cannot be taken lightly.

The School of Pharmacy, including its academic and practitioner faculty, has a primary responsibility to assure that our students are provided the necessary foundation to engage in the life-long learning that is critical to the continued success of a practicing pharmacist.

The current baccalaureate program is excellent. University of Maryland graduates are the equal of those of any other baccalaureate program in the country. However, the BS program is already much longer than a traditional baccalaureate program—5⅓ academic years. Since the mid-eighties the faculty has been striving to alter the content of the baccalaureate curriculum to enhance our teaching of immunology, nutrition, biotechnology and gene therapy. Attempts have been made to improve the process of education through our integrated skills laboratory, increased emphasis on problem solving the development of communication skills, and small group instruction. These efforts have been hampered by a constricted curriculum that incorporates all didactic instruction plus the Professional Experience Program within five calendar years. This permits students only ten elective credits in their entire professional program and at the conclusion, the student receives a baccalaureate degree—assumed by many non-pharmacists to represent a four-year program.

Fortunately the University of Maryland has most of the resources to develop a truly innovative and responsive Doctor of Pharmacy program, including an excellent faculty. The faculty will expand by 6 to 8 persons when all available positions are filled. The Professional Experience Program is outstanding and depends upon the contributions of a practitioner faculty exceeding 100. The School also enjoys the strong support of a loyal group of alumni and active state pharmaceutical associations.

These factors convinced the faculty that now is the time to act to design an innovative six-year curriculum that would better meet the needs of society, the profession of pharmacy, and most importantly, our students. The program will be built upon a totally revamped base of foundation courses and professional experiences that will incorporate new concepts of biotechnology, drug design and drug therapy presented and taught in such a way that it will engage students from the beginning in problem-solving, relevant small group exercises, and the application of material to practice.

Impact on Current B.S. Pharmacists

The School does not intend to neglect its Alumni who hold the baccalaureate degree. We will plan, with your help, mechanisms by which existing practitioners, who so desire, can earn the Doctor of Pharmacy degree through external study involving some credit for practice experience and the opportunity to take courses both with our professional students on campus and through an expanded curricular-based continuing education course selection.

The effect of the transition to an all Pharm.D. program will be gradual, since only about 100 graduates a year will enter a pool of several thousand baccalaureate holders. The school has a major commitment to assist those who wish to earn a Pharm.D. to do so within the constraints of practice responsibilities. The Faculty has endorsed the concept of life-long learning and will develop curricular-based continuing education modules that may both stand alone and be combined to fulfill of the requirements for certificate programs and eventually the Pharm.D. degree. The final, eighth semester, in the proposed curriculum presents an opportunity for professional students, practitioners and faculty to interact in educational modules that are on the cutting edge of pharmaceutical care. For the student, modules may be requirements in a track in the curriculum; for the practitioner, these modules may provide continuing education credits, may be combined in a certificate program, or may be building blocks for the external Pharm.D. Program. Practitioners will be involved in constructing this program to assure its practical feasibility.

The proposed program accentuates the role of the School in the spectrum of pharmacy education. The most important features of this spectrum are:

- A Doctor of Pharmacy Program that will better meet the needs of future pharmacists
- A plan by which current practitioners can earn an External Pharm.D. degree.
- An expanded role for current practitioners in the education of future pharmacists.
- Curricular based continuing education modules.
- Experiential based continuing education modules.
- Certificate programs.

The Curriculum

The Pharm.D. program will differ in a major way from our existing baccalaureate program: flexibility. Planning has just begun to develop the curriculum and a great deal of work lies ahead for its development. The structure under consideration consists of: 1) a core of basic science courses and experiential rotations, 2) a significant number of elective courses and rotations that will make up several differentiated tracks, and 3) additional electives to be used as the student desires to fill out an individual plan of study.

The curriculum will provide the opportunity for students to pursue differentiated tracks. Such tracks will include, for example, specialization in community pharmacy practice, institutional practice, or pregraduate studies in each of the pharmaceutical sciences. The current two-year advanced Doctor of Pharmacy degree program will be integrated into the new curriculum as a track for those students wishing to specialize in pharmacotherapy. Other options under study include joint degree programs with law and business. Finally, the new curriculum will permit students to select free electives to round out their program from anywhere in the expanded University of Maryland system.

Examples of the areas of study that could be included in certain tracks are:

Community Pharmacy with prospective courses in Orthotics, Business and Management, Computer Applications, Community Pharmacy Externship, Non-Prescription Drugs, Elder Health Care, and Financial Management. An **Institutional Pharmacy** track would cover Drug Use Review, Computer Applications, Parenteral Nutrition, Financial Management, Institutional Pharmacy Practice, and Institutional Pharmacy Externships. **A Pharmacotherapy** track would contain a Therapeutics Seminar, Critical Care, Advanced Therapeutics, Ambulatory Care Clerkship, Advanced Pharmaceutics, Antibiotics, Research Design, Advanced Pharmacology, and specialized Clinical Clerkships. A **Pre-Graduate Studies** track would be available for each of the Pharmaceutical Sciences. The composition of the track would depend on the discipline, but completion of this track would shorten the time required to obtain a graduate degree.

The Transition

The transition to the Doctor of Pharmacy will require the coordinated efforts of many persons. In addition to the tasks of curriculum development and course construction, additional practice sites must be identified, an external Pharm.D. program must be developed, resources must be obtained and potential students and their advisors must be kept informed. The following is an outline of the structure being established to carry out the transition process. Several of the groups will include alumni representatives and other practitioners. This is truly to be an effort of the School and the profession.

The Doctor of Pharmacy Transition Advisory Committee will consist of several pharmacy alumni, practitioners, and others from outside the School and will provide advice to the Dean and Committee Chairpersons on the overall Pharm.D. development process.

The School's **Curriculum Committee** will be responsible for designing the curriculum itself, including the didactic courses, the experiential components, the tracks, the pre-pharmacy requirements, the general education requirements, and the electives. This Committee will be asked to consult widely outside the School during the process of curriculum development.

The existing **Student Affairs Committee** will be responsible for the recruitment of students, the admissions process and the development of a plan for phasing in the new program. It is anticipated that as enrollment in the Pharm.D. Program grows, many students in the B.S. program will want to switch over to the Pharm.D. program. In addition, several options are possible during the transition period, to increase total number of graduates, including admitting a larger than usual B.S. class or recruiting transfer students. These, and other options, will be carefully studied. It is important to emphasize that the implementation plan will ensure that there will not be a year with no graduates.

A new **Practice Sites Development Committee** will consist of faculty members currently responsible for the Professional Experience Program and the clinical rotations plus a number of practitioner members. It will be responsible for identifying and assessing additional practice sites consistent with the aims of the developing curriculum and the various tracks.

An **External Pharm.D. Committee** will consist of faculty members and practitioners charged with developing a feasible way for

Concluded on page 28

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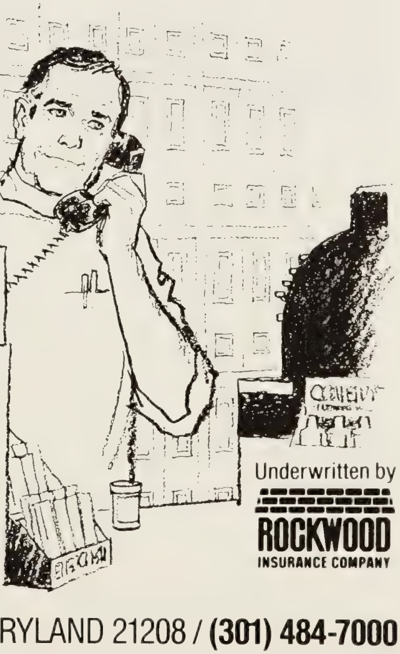

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Elderly, Infections and Antibiotics

by Peter P. Lamy, Ph.D., Sc.D.

Infections in the Elderly

Undoubtedly, elderly are more often exposed to nosocomial pathogens than are younger patients, for various reasons. Among them are a higher rate of institutionalization, perhaps poorer hygiene, and an increased poverty rate. Infections are more dangerous to older than younger people. Advanced age, itself, often worsens the prognosis of infections, particularly pneumococcal infections. Simply put, elderly can't fight infections as well as can younger patients, one of the reasons being that the immune system does not function as well in older than in younger age, another being that the reserve capacity of the elderly is decreased.

Infections in elderly may often unmask or decompensate underlying diseases, such as heart failure, diabetes, dementia, or others. For example, older patients with respiratory infections are more likely to develop hypoxia, which may lead to the unmasking of coronary artery disease. Importantly, as far as treatment is concerned, elderly patients often suffer from volume depletion (induced, perhaps, by diuretics) or from volume insult. For example, due to their lack of reserve capacity, an extra liter of saline solution, used to manage an infection, may cause pulmonary edema. Infections in elderly are often overlooked and some studies have reported that, perhaps too often, detection of infections in nursing home residents is delayed by five or six days. One reason may be the fact that older patients with infections are less likely to present with typical symptoms.

Pneumonia may present without fever, and typical findings in sepsis (mental obtundation, tachycardia, fever) may be absent. In sepsis, the only clue may be the patient's failure to eat. Incidentally, urinary tract infection is the most common cause of sepsis in the elderly; pneumonia is the next most common cause. The types of infections found among the elderly vary with the site of care. Strep pneumonia and H influenza are more often found among community-living elderly than among nursing home residents, while gram-negative bacilli are more often found among nursing home residents. In 1982, the Centers for Disease Control reported about 750,000 hospital-acquired urinary tract infections. Women apparently have a greater incidence of infections, mainly urinary tract infections, than men. The mortality rate among those with urinary tract infections is five percent.

The incidence and mortality of infections are higher in patients with rheumatoid arthritis than in those without it, and the incidence of rheumatoid arthritis continues to increase with age. There is a clear correlation between the risk of infections and clinical variables such as poor functional capacity and the use of glucocorticoids. Rheumatoid arthritis patients have an increased susceptibility to septic arthritis. Pneumonia is the most common cause of death in patients with rheumatoid arthritis. The mortality rate due to infections in elderly is higher than in younger patients. For example, the mortality rate among older patients with afebrile bacteremia is 65%, compared with 25% to 35% in younger patients. Patients on a ventilator who acquire a systemic infection, a sepsis, or a pneumonia have a mortality rate ranging from 40% to 50%. Perhaps nutrition plays a role. Some time ago, a study of elderly hospitalized men with infections showed that the mortality rate among those undernourished was 28%, while for those who were well-nourished it was only four percent.

In today's climate of cost-containment, one should also be familiar with the economic effect of infections. A nosocomial urinary tract infection will increase the length of stay in a hospital by about one-half day. A wound infection will increase the length of stay about 7.5 days, and nosocomial pneumonia will increase it by about four days. A longitudinal prospective study of 1,300 patients showed that 22% of all persons admitted to a hospital had an event serious enough to prolong the length of stay, but that figure increased to 40% in those older than 70 years. DRG "outliers" for infections are most often found among the very old, i.e. those 85 years old and over.

Treatment of Infections

Considerations Before Treatment: Before determining the specific treatment regimen and agent, one ought to remember that overt disease affecting the eliminating organs (liver, kidneys) is over-represented in the elderly. Furthermore, while interindividual variation is great in healthy elderly, it is even more so in the acutely or chronically ill. For example, in one study involving 417 elderly patients, an attempt was made to establish therapeutic gentamicin levels. The dosage needed varied from 0.3 to 22.0 mg/kg/day; 25% of the patients needed more than 5 mg/kg/day to reach the desired level, while 33% needed less than 3 mg/kg/day. The half-life of gentamicin in these patients ranged from 0.3 to 32.7 hrs.

Once the patient variability has been considered, one should start treatment as soon as possible. Selection of a specific agent should be based on consideration of previous treatment regimens the patient may have received and the patient's response to those agents. One should also consider the agents that have proven successful in the particular site of care. Not too infrequently, particular agents may work in one environment for one type of infection, but not in another one. Thus, physicians caring for nursing home residents should be familiar with the general overall picture of infections and their response to particular antibiotics in specific nursing home populations.

Once this has been established, one should select the most active, least toxic, and most cost-effective agent. If intravenous antibiotics are selected, the patient should also receive intravenous fluids or oral fluids, to make sure that the volume status is maintained. As pointed out, care must be exercised, since an excess of fluids may lead to congestive heart failure or pulmonary edema. However, the volume status of the patient must be maintained.

Adverse Drug Reactions: Antibiotics rank high among the drugs identified as causing adverse drug reactions in the elderly most often. In one study, antibiotics were the leading cause of serious adverse drug reactions, most often pseudomembranous colitis. Diarrhea, colitis, and pseudomembranous colitis (related to Clostridium difficile cytotoxin) is most often caused by clindamycin, cephalosporins, and oral penicillins. Bone marrow depression due to antibacterials is more common among elderly than younger patients. Trimethoprim/sulfamethoxazole causes leukopenia, thrombocytopenia, and pancytopenia more often in the elderly. Coagulation defects and bleeding is observed more often in elderly than younger patients. The drugs most often involved are the cephalosporins with a 3-methylthiotetrazole ring, i.e. cefamandole, cefoperazone, and moxalactam.

Theoretical considerations do not always predict side effects with certainty. The physiologic loss of vestibular and cochlear hair cells make elderly more susceptible to irreversible hearing loss. Thus, aminoglycosides should be used with caution in elderly, yet the drug's ototoxicity is not clearly age-related. On the other hand, it appears that aminoglycosides are more often involved in renal toxicity which is directly related to the drug's serum levels. If levels are monitored and the dose is adjusted accordingly, renal toxicity is rapidly reversible. An additional word of caution is necessary. Anaphylactic fatalities have been reported in elderly with no history of penicillin allergy. Thus, skin testing may be indicated for high-risk patients.

Drug interactions may be responsible for antibiotic toxicities. For example, liver toxicity may result from an interaction of sulfamethoxy-pyridazine with hydralazine, nitrofurantoin, or phenothiazines. Hypoglycemia may occur when chloramphenicol interacts with coumarin derivatives, or when sulfonamides interact with warfarin. A host of drugs, given concomittantly with aminoglycosides, may increase a patient's risk to nephrotoxicity. Among them are loop diuretics and cephalosporins. Colistin may heighten the risk of nephrotoxicity when given together with cephalothin. The fluoroquinolones can interact with NSAIDs to cause CNS toxicity (seizures). Incidentally, patients receiving high doses of quinolones should be well hydrated. Alkalinization of their urine should be avoided, and rapid infusion of quinolones should be avoided as this can cause crystalluria. Most of these interactions are pharmacokinetic in nature, although some are of pharmacodynamic origin.

The Pharmacokinetics of Some Antibiotics

The pharmacokinetic characteristics of antibiotics can be altered by many factors, thus potentially altering their effectiveness and toxicity. In colorectal surgery patients, for example, bowel decontamination, blood loss, and irrigation fluids alter the pharmacokinetics and reduce the effectiveness of cefoxitin, used prophylactically.

Often, antibiotic serum levels are reduced due to an interaction with another drug, as happens when antiepileptic drug interact with doxycycline. On the other hand, serum levels may be increased. PAS increases the serum levels of isoniazid, for example. Toxicity and/or adverse effects may also occur when the half-life of an antibiotic is prolonged by another drug. Aspirin and indomethacin prolong the half-life of penicillin, and probenecid increases the half-lives of cephalosporins and PAS. Most often, these interactions are due to changes in absorption, distribution, metabolism, and excretion.

Absorption: Increased or decreased absorption can influence both the therapeutic response and the risk for concentration-dependent adverse effects. Altered absorption may be due to reduced gastric acidity, increased frequency of gastritis with anacidity, reduced gastric emptying rate, or reduced small bowel motility. Most often, the effects are unpredictable. The rate and/or extent of absorption is often decreased by concurrent administration of antacids, possibly sucralfate, and/or some enteral nutritional supplements. In gastrectomy patients, absorption of ampicillin, nitrofurantoin, and sulfamethoxazole is reduced.

Distribution: Lean body mass decreases with age, changing the ratio of lean body weight to lipid tissue. As lean body mass decreases, lipid-insoluble antibiotics such as beta-lactams and aminoglycosides will show increased peak serum levels. Changes in the volume of distribution, i.e. lean body mass, also change the disposition of ciproflaxin and propicillin.

Although it is generally agreed that in healthy elderly albumin concentrations are not altered, aging does increase the risk of diseases leading to hyperbilirubinemia and

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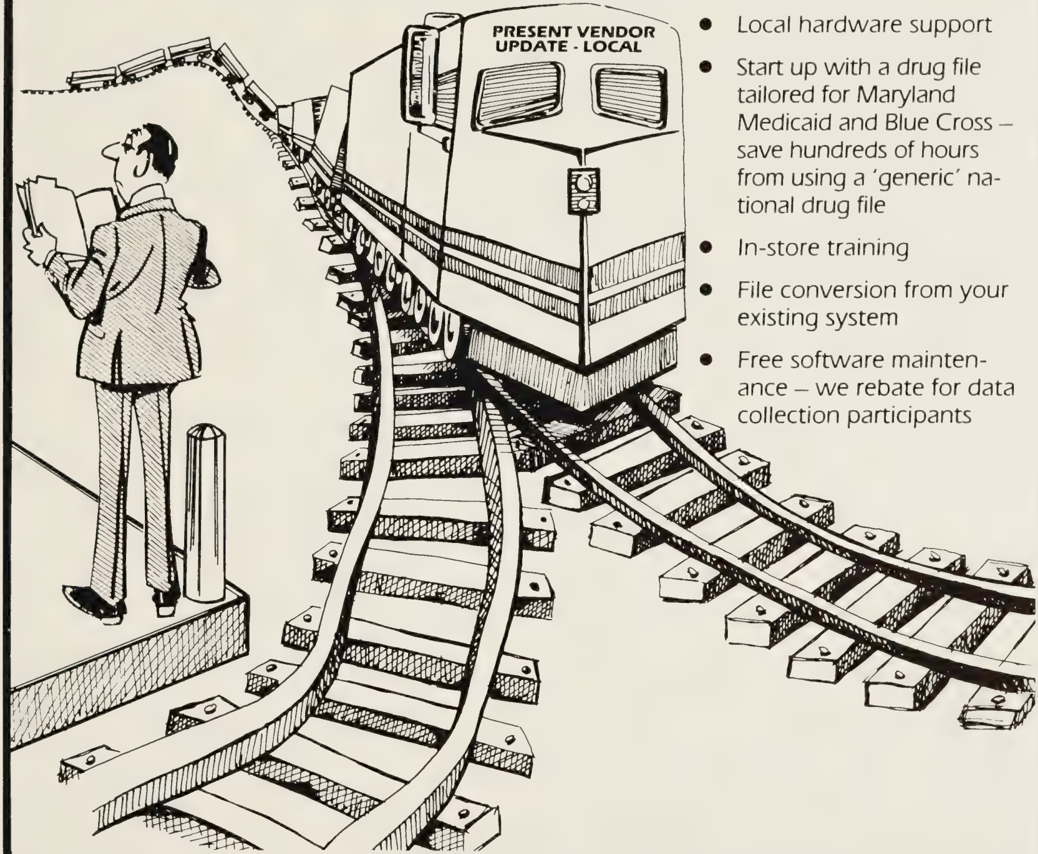

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uremia, which would reduce albumin.

When albumin concentrations are reduced and/or the binding affinity of albumin is reduced, free concentrations of sulfonamides, penicillins, doxycycline, cephalosporins, and nitrofurantoin are increased. The outcome (i.e. a more intense action, an altered rate of metabolism) depends on the metabolic pathways of the individual antibiotics. Most antibiotics are highly protein-bound, most often to albumin, thus this kind of drug-disease interaction should be anticipated. There may be one exception. It has been suggested that erythromycin is bound to alpha-globulin.

Liver Metabolism: The metabolism of antibiotics can be altered by other drugs and, in turn, antibiotics can alter the metabolism of other drugs. Rifampin stimulates microsomal liver enzymes and can change the metabolism of corticosteroids, cyclosporin, theophylline, tolbutamide and warfarin. However, the enzyme-inducing effect of rifampin takes place over several days.

Therefore, its short-term effect, i.e. if it is administered only for three or four days, is probably negligible. On the other hand, when titrated corticosteroid therapy is used in the treatment of asthma and rifampin is then administered for a prolonged period of time, the corticosteroid may be excreted more quickly, and asthma may be worsened.

Carbamazepine is used to prevent partial seizures. It is cleared by hepatic metabolism. Isoniazid and erythromycin can inhibit liver enzymes, thus inhibiting the metabolism of carbamazepine, causing accumulation and possibly diplopia and ataxia. A similar interaction may involve theophylline. This drug has a narrow therapeutic index, and toxicity, i.e. tachyarrhythmias, may be a major risk. Theophylline is cleared by hepatic metabolism. Erythromycin can inhibit liver enzyme metabolism of this drug, thus causing an increase in plasma theophylline concentration, and toxicity.

Finally, altered liver blood flow should be considered. In elderly, a given dose of ciproflaxin produces much higher serum levels than in younger patients. One reason may be a reduced first-pass effect in the liver.

Excretion: Antibiotics are excreted by glomerular filtration, sometimes combined with active tubular secretion, by biliary excretion, or by metabolism to inactive metabolites. Many antibiotics are renally excreted. When prescribing these drugs for elderly, the physician must keep in mind age-related kidney changes. The renal cortex is decreased substantially, as is renal blood flow. Creatinine clearance is variably decreased. In about two-thirds of elderly, one will see a decrease, perhaps by as much as 30% to 40%, but in the remainder, there is no decrease. There may even be an increase in a small number of elderly. Futhermore, concentration of urine, free water clearance, sodium conservation, and acid excretion are all decreased with advancing age. Importantly, serum creatinine may not change with age. For estab-

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lishing the starting or maintenance dose of water-soluble antibiotics, serum creatinine cannot be used. Even if kidney function is markedly reduced, serum creatinine will fall within normal ranges if the patient is old and has a low body weight. Only creatinine clearance will yield a true picture of kidney function status. The mathematical prediction of creatinine clearance may sometimes be incorrect, and that is also true for malnourished patients. Some studies have indicated that possibly as many as 50% of home care patients and nursing home residents may be malnourished to some extent. It has been documented that the pharmacokinetic characteristics of cefoxitin, chloramphenicol, gentamicin, isoniazid, PAS, penicillin G, sulfonamides, tetracycline, and tobramycin are altered in malnourished patients. For a number of renally-excreted antibiotics, dosage reduction has been recommended when they are to be administered to the elderly (Table 1), while clindamycin, doxycycline, erythromycin, metronidazole and rifampin can usually be given to elderly in the normally recommended dose. If the glomerular filtration rate is decreased to 30 ml/min or lower, there will be a drastic increase in the half-life of those antibiotics solely excreted renally. Examples would be the aminoglycosides and cephaloridine.

As renal clearance decreases, non-renal (liver) clearance may increase, as is the case with moxalactam. In one study, total body clearance of dicloxacillin was 0.069 in young men. Renal clearance accounted for 0.067 and non-renal clearance for 0.002. In elderly men, these values changed, respectively, to 0.070 and 0.021. Non-renal clearance is highly unpredictable. Yet, there is some advantage to this alteration in the excretory route. For example, dose reduction due to reduction in renal function is less of a problem. On the other hand, biliary excretion can lead to an increased risk of adverse gastrointestinal effects due to a high stool concentra-

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Things You Should Know FOR YOUR GOOD HEALTH

Cold and Being Old

As you get older, your body becomes less able to respond to long exposure to cold. In cold weather, some older people may develop accidental hypothermia (hi-po-thur-mee-uh), a drop in internal body temperature that can be fatal if not detected and treated promptly. This is especially true of those with heart and circulatory disease, stroke, or diabetes.

Accidental Hypothermia

Hypothermia is a condition of below-normal body temperature — typically 95°F (35°C) or under. *Accidental* hypothermia may occur in anyone who is exposed to severe cold without enough protection. However, some older people can develop accidental hypothermia after exposure to relatively mild cold.

Those elderly most likely to develop accidental hypothermia are: the chronically ill, the poor who are unable to afford enough heating fuel, and those who do not take the normal steps to keep warm. The small number of aged persons whose temperature regulation is defective face the greatest danger. For unknown reasons, these people do not feel cold or shiver, and thus cannot produce body heat when they need it. It is interesting to note that many people who have "felt cold" for years may actually have a lower risk of accidental hypothermia.

The only sure way to detect hypothermia is to use a special low-reading thermometer. A regular thermometer will do as long as you shake it down well. If the temperature is below 95°F (35°C) or does not register, get emergency medical help. Other signs to look for include: an unusual change in appearance or behavior during cold weather; slow, and sometimes irregular, heartbeat: slurred speech; shallow, very slow breathing; sluggishness; and confusion. Treatment consists of rewarming the person under a doctor's supervision, preferably in a hospital.

Protective Measures

In Cold Weather: There is no strong scientific basis for recommending specific room temperatures for older people. However, setting the heat at 65°F (18.3°C) in living and sleeping areas should be adequate in most cases, although sick people may need more heat.

Measures you can take to prevent accidental hypothermia include:

- Dress warmly even when indoors, eat enough food, and stay as active as possible.
- Because hypothermia may start during sleep, keep warm in bed by wearing enough clothing and using blankets.
- If you take medicine to treat anxiety, depression, nervousness, or nausea, ask your pharmacist whether the medication might affect the control of body temperature.
- Ask friends or neighbors to look in on you once or twice a day, particularly during a cold spell. See if your community has a telephone check-in or personal visit service for the elderly or homebound.

Contact for Assistance

Anyone trying to save on fuel costs can protect against hypothermia by dressing warmly and heating only one or two rooms of the home. There are government-funded programs to help low-income families pay high energy bills, weatherize (insulate) their homes, or even get emergency repairs of heating units. Your local community action agency or area agency on aging should be able to direct you to the proper source of assistance. Caution, common sense, and prompt medical attention can help older people avoid illnesses due to cold. For the brochure *A Winter Hazard for the Old: Accidental Hypothermia,* write to: National Institute on Aging, Box HYPO, Bldg. 31, Rm. 5C35, Bethesda, Maryland 20892.

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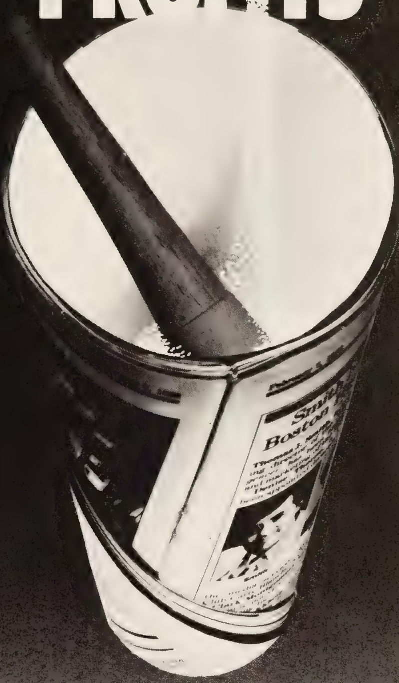

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tion of antibiotics. For some antibiotics, decreased renal elimination means increased biliary excretion. Among them are cefoperazone and ceftriazone. When biliary excretion increases, the half-life of drugs so affected will increased more slowly.

Metabolic excretion of antibiotics is independent of kidney function, unless water-soluble metabolites are potentially toxic, as may be the case with doxycycline, chloramphenicol, clindamycin, and erythromycin.

Monitoring of Serum Levels

Only for a very few antibiotics is monitoring of serum concentration levels mandatory. They are the aminoglycosides, 5-fluorocytosine, and vancomycin.

Dosage Recommendations

Only a few dosage recommendation for antibiotics to be used for elderly have been noted in the literature. It has been noted that patients older than 60 years of age require a lower than usual maintenance dose of aminglycosides. Also, the daily dose of antibiotics with major renal elimination (many beta-lactams) should be reduced by 50% in patients who are more than 70 years of age.

Topical Administration of Antibiotics

Systemic antibiotics are of no proven benefit in the treatment of pressure sores, which afflict many elderly patients. Since elderly present with reduced vascularity, systemic antibiotics cannot work. However, systemic antibiotics are needed for pressure sore patients who are septic or suffer from oestomyelitis.

It is not too unusual to see use of iodine or hexachlorophene in the management of pressure sores. Both are toxic to granulation and young epithelial tissue. Furthermore, topical antibiotic use may cause emergence of resistant organism, and should be avoided.

Some Specific Recommendations

Specific antibiotics have been recommended for elderly with specific infections. For example, for Strep pneumonia, penicillin is recommended, with erythromycin, a cephalosporin, or vancomycin suggested as alternatives. For H. influenza, an advanced beta-lactam or beta-lactam/inhibitor combination is thought best, with chloramphenicol or TMP/SMX being alternatives. For community-acquired pneumonia, an advanced-generation beta lactam is recommended as monotherapy. If combination therapy is needed, an aminoglycoside plus a cephalosporin or beta lactamase inhibitor is recommended. For institutionally-acquired pneumonia, ticarcillin/clavulanate is probably the preferred combination therapy.

Conclusion

Antibiotics are life-saving drugs for the elderly, if used correctly. However, they rank high among drugs causing adverse effects in the elderly, and those prescribing and using them must be familiar with age- and disease related changes that may affect the action of antibiotics.

TABLE 1
Examples of Renally-Excreted Antibiotics for Which Dose Reduction is Advisable

Aminoglycosides
Ampicillin
Aztreonam
Ceftazidime
Cefuroxime
Imipenem
Isoxazolyl penicillins
Moxalactam
Ofloxacin
Penicillin G
Piperacillin
Vancomycin

Dr. Lamy is Professor and Assistant Dean, Geriatrics, Director, The Center for the Study of Pharmacy and Therapeutics for the Elderly, School of Pharmacy and Professor, Epidemiology and Preventive Medicine, Professor, Family Medicine, School of Medicine, University of Maryland at Baltimore, Baltimore, Maryland.

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WC-43-JA-5907-1(11-89)

Community Forum

Poison Prevention Week Fact Sheet—1990

1. Q. **What is National Poison Prevention Week?**

   A. Public Law 87-319 authorizes the President to designate annually the third week in March as National Poison Prevention Week. This act of Congress was signed into law on September 25, 1961, by President Kennedy after which the Poison Prevention Week Council was organized to coordinate this annual event. Congress intended this event as a means for local communities to raise awareness of the dangers of accidental poisonings and to take such preventive measures as the dangers warrant.

2. Q. **Is there a special theme for National Poison Prevention Week?**

   A. Yes, our basic theme is "Children Act Fast . . . So Do Poisons!" This means that parents must always be watchful when household chemicals or drugs are being used. Many accidents happen when adults are using a product but are distracted (for example, by the telephone or the doorbell) for a few moments. Children act fast, and adults must make sure that household chemicals and drugs are stored away from children *at all times*. The poster for 1990 bears the following words: One moment is all it takes . . . take a moment to poisonproof.

3. Q. **If my child is accidentally poisoned or eats or drinks a substance which might be poison, where can I find information on treatment?**

   A. There are presently some 104 Poison Control Centers in the United States that maintain information for the physician or the public on necessary treatment for the ingestion of household products and medicines. They are familiar with the toxicity (how poisonous it is) of most substances found in the home or know how to find this information. Their phone number can be found on the inside cover of the yellow or white pages of the telephone directory. Keep the number on your phone.

4. Q. **Are there some first aid measures I can take when an ingestion takes place?**

   A. Remain calm. Not all medicines and household chemicals are poisonous, and not all exposures necessarily result in poisoning. For medicines, call the Poison Control Center or physician immediately. For household chemical products, follow first aid instructions on the label, then call the Poison Control Center or physician. If unable to contact them, call your local emergency number (911 in most areas) or the operator. Keep emergency numbers listed near the phone before an emergency arises. When you contact the Poison Control Center or other emergency personnel, be prepared to give the facts to the expert on the other end of the phone. The expert must know:

   —The victim's age.
   —The victim's weight.
   —The poison involved: was it swallowed, inhaled, absorbed through skin contact, or splashed into the eyes.
   —Any first aid which may have been given.
   —If the person has vomited.
   —Your location, and how long it will take you to get to the hospital.

   Have the label ready when you call the expert. The label provides information concerning the product's contents and advice on what immediate first aid to perform. This will be useful when giving first aid and when you call the Poison Control center.

   —If medicine has been swallowed, do not give anything by mouth until advised by the Poison Control Center.
   —If chemicals or household products have been swallowed, follow the first aid instructions on the container. Then call for professional advice about whether or not you should make the patient vomit.

   Always keep on hand at home a one-ounce bottle of syrup of ipecac for each child or grandchild in the home. Use only on advice of the Poison Control Center, emergency department, or physician. If you have HUMCO brand ipecac syrup, you should replace it with a different brand. A potentially deadly substance (eucalyptus oil) was mistakenly labeled as syrup of ipecac by HUMCO Laboratory, so all HUMCO ipecac syrup must be replaced.

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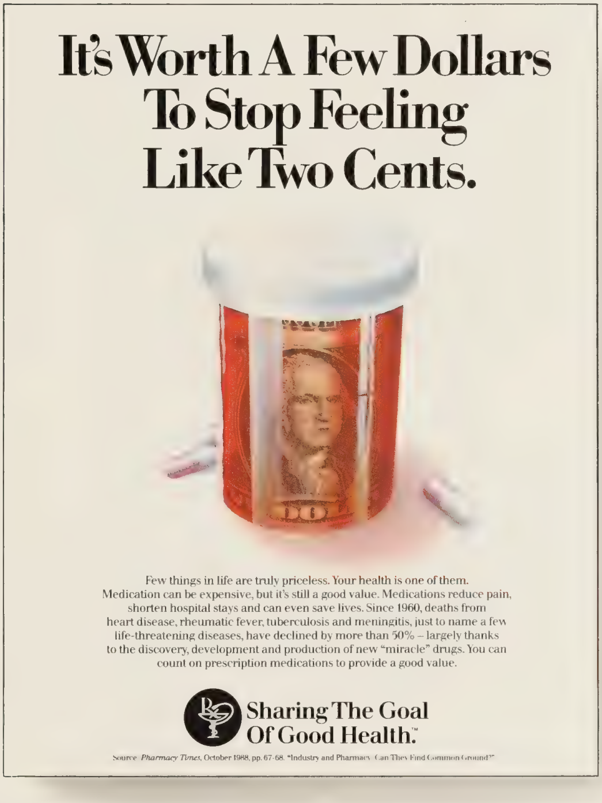

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Source: *Pharmacy Times*, October 1988, pp. 67-68. "Industry and Pharmacy: Can They Find Common Ground?"

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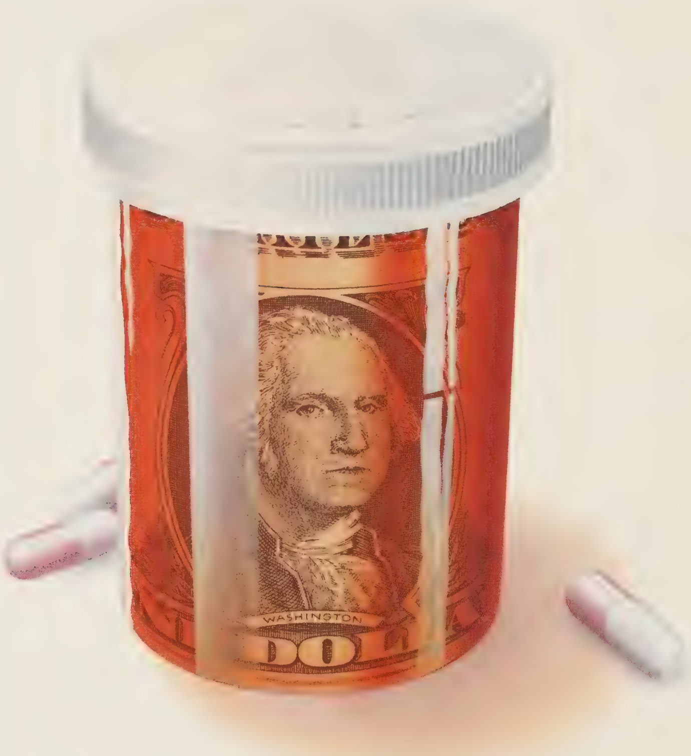
We would appreciate receiving your comments. What subjects should we address in future posters? If you would like reprints of this poster, or others in the series, write to Upjohn Professional and Trade Relations, P.O. Box 30091, Lansing, MI 48909

It's Worth A Few Dollars To Stop Feeling Like Two Cents.



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Sharing The Goal Of Good Health.™

Source: *Pharmacy Times*, October 1988, pp. 67-68. "Industry and Pharmacy: Can They Find Common Ground?"

5. **Q. Why are so many accidental poisonings related to children under five years of age?**

A. Children under the age of five are in stages of growth and development where they are constantly exploring and investigating the world around them. This is the way they learn. It is a normal characteristic and should not be discouraged. Unfortunately, what children see and reach for they usually put in their mouths. It is this hazard to which parents must be alerted. As the youngsters' mobility, ingenuity, and capabilities increase, storage of medicines and household products should be related to the age of each child. For instance, when children are crawling, they can find such products as drain cleaners stored under the kitchen sink and on the floor. As soon as they are able to stand, they can reach such products as furniture polish on low-lying tables, as well as medications in purses on beds. When they start to climb, they can reach medicine on countertops or open the medicine cabinet and get to the medicine. These products should be locked up where possible, out of the child's reach—even when safety packaging is used. Adults should never leave a medicine or household chemical product unattended while in use; children act fast and can get hold of a product and swallow it during the short time while the adult is answering the telephone or doorbell.

6. **Q. If I find my youngster playing with a bottle of medicine or some household product, how can I tell if he or she has swallowed some and what should I do?**

A. Reactions vary, depending on the product. Sometimes the child may vomit, or he or she may appear to be drowsy or sluggish. Some of the substance may remain around the child's mouth and teeth. There may be burns around the lips or mouth from corrosive items; or you may be able to smell the product on the child's breath. If a household chemical has been ingested, follow the first aid instructions on the label and then **get medical advice—even if you suspect, but don't know for sure, that your child has ingested a potentially hazardous product.** Call your Poison Control Center, emergency department, or physician. Place these telephone numbers on your phone.

7. **Q. Why do we need safety packaging?**

A. Although labeling requirements and educational programs have had some effect on reducing the number of childhood ingestions, significant numbers of children are still being poisoned by accidentally ingesting household products which can be hazardous, such as medicines, cleaning products, and solvents. Safety packaging, if used properly, provides an additional barrier to prevent accidental ingestions.

8. **Q. As a parent, how certain can I be regarding the effectiveness of this kind of packaging?**

A. While safety containers provide an increased element of protection, children are going to investigate several different ways of opening a container. If their fingers won't work, their teeth might. It would be impossible to manufacture a package or a closure that would prevent every single child from getting into the contents under all possible circumstances. Therefore, the Poison Prevention Packaging Act requires that the packages be difficult for children under five years of age to obtain a toxic amount within a reasonable time. This requirement does not mean that all such children would be unable to open or otherwise obtain a toxic amount. For example, U.S. Consumer Product Safety Commission regulations require that aspirin, and other products, be packaged in special containers which would prevent 80% of those children tested from opening the container during a 10-minute test. Obviously, then it is conceivable that two children out of every 10 might be able to open the container. So safe storage is very important.

9. **Q. How can I use safety packaging properly?**

A. Remember these steps: (1) Read the instructions to make it easier to open the packaging. (2) Be sure to resecure the closure tightly. **Never transfer the contents to other containers.** (3) Do not leave loose pills on the table or kitchen counter. (4) Keep medicines and household products (even those with safety caps) out of sight and out of reach. The pharmacist or merchant from whom the product was purchased can teach you to open and close the packaging, if you have difficulty. Opening and closing becomes easier with practice. While it may take a few additional seconds of your time, those few seconds may save the life of a child who is very dear to you.

10. **Q. What kind of products can I expect to find in safety packaging?**

A. Aspirin and aspirin-substitutes (acetaminophen), certain types of liquid furniture polish, oil of wintergreen, drain cleaners, oven cleaners, lighter fluids, turpentine, paint solvents, windshield washer solutions, automobile antifreeze, oral dosage prescription drugs, iron-containing drugs, and dietary supplements are among the substances required to be in child-resistant packaging.

22,000 Items.
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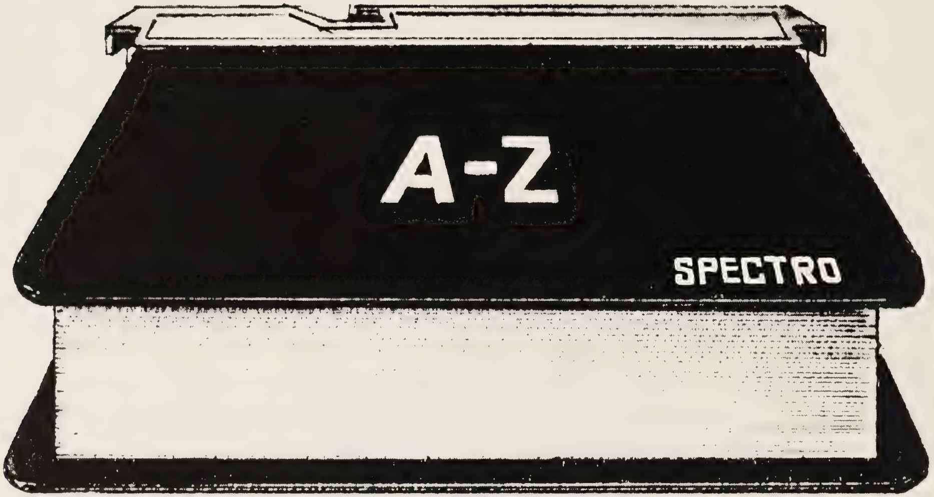

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11. Q. **There are no small children in my home. Do I have to use safety packaging?**

A. In general, all adults should use safety packaging because young children may visit the adult's home. To benefit people who are elderly or handicapped, the Poison Prevention Packaging Act allows a manufacturer to offer a regulated non-prescription product in one size or package that doesn't comply with the safety packaging standard, if that manufacturer also offers the same product in child-resistant packages. Additionally, if a prescription is involved, the purchaser or prescribing physician can request regular, non-safety packaging. However, such requests should be kept to a minimum since they increase the danger of childhood poisonings. *Accidents have happened when youngsters have visited homes where no children live.* Little ones have been poisoned after finding vials left in purses or on bedside tables. *And accidents have happened when older persons carried medicines into homes that have small children.*

A recent study conducted for the U.S. Consumer Product Safety Commission by the American Association of Poison Control Centers found that 23% of the oral prescription drugs that were ingested by children under 5 belonged to someone who did not live with the child. Overall, 17% of the drugs ingested belonged to a grandparent or great-grandparent. This percentage varied from city to city: in Salt Lake City, 9% of the drugs ingested belong to a grandparent, but in Shreveport, Louisiana, 24% of the drugs ingested belonged to a grandparent. The data suggest that grandparents—and all adults—need to use child-resistant closures and keep medicines out of the reach of young children.

12. Q. **Is there any evidence that the number of child poisonings has decreased since child-resistant packaging began to be used?**

A. Yes. In 1972, before prescription drugs were required to have child-resistant packaging, 96 children died from drug ingestions (5.6 deaths per million children under age 5). By 1974, the first year in which child-resistant packaging was required for most prescription drugs, there were 57 fatalities (3.4 deaths per million children under 5), a substantial decrease. In subsequent years, the number of deaths due to ingestions of these drugs continued to decline. In 1986, the last full year for which we have received information on drug ingestion fatalities, there were 40 deaths (2.2 deaths per million children under 5). There has been a reduction in deaths with all household chemicals and with aspirin products in particular since 1972 (when aspirin was first required to be in child-resistant closures). However, the number of ingestions or exposures to household medicines and chemicals continues to be high. The American Association of Poison Control Centers reports that for the past few years the number of children under the age of 5 exposed to potentially poisonous substances has been at least 620,000 per year.

13. Q. **Why is it dangerous to use cups or soft-drink bottles to hold paint thinner, turpentine, gasoline?**

A. Children associate cups, soft-drink bottles, and drinking glasses with food and drink. Fatalities have been reported when lighter fluid intended for outdoor barbecue fires was poured into such containers and subsequently swallowed by a child.

Deaths of Children Under Age 5 Involving Household Products

Deaths due to all household chemicals		Deaths due to aspirin products	
Year	# Deaths	Year	# Deaths
1972	216	1972	46
1973	149	1973	26
1974	135	1974	24
1975	114	1975	17
1976	105	1976	25
1977	94	1977	11
1978	81	1978	13
1979	78	1979	8
1980	73	1980	12
1981	55	1981	6
1982	67	1982	5
1983	55	1983	7
1984	64	1984	7
1985	56	1985	0
1986	59[a]	1986	2[b]

Source: National Center for Health Statistics

[a] This represents a decline of 73% since 1972.

[b] This represents a decline of 96% since 1972.

14. Q. **Are there any good housekeeping rules I can use to prevent poisoning accidents?**

A. (1) Keep all household chemical products and medicines out of reach and out of sight of youngsters and, preferably, locked up when not in use. Medicines on kitchen counters are very accessible to young children.

(2) When these products are in use, *never* let them out of your sight—even if you must take them along when answering the telephone or the doorbell.

(3) Store all medicines separately from household products, and store all household chemical products away from food.

(4) Keep items in their original containers.

(5) Leave the original labels on all products, and read the label before using.

(6) Always leave the light on when giving or taking medicines.

(7) Avoid taking medicines in front of chil-

dren, since youngsters tend to imitate grown-ups.

(8) Refer to medicine as "medicine"—not "candy."

(9) Clean out the medicine cabinet periodically, and safely dispose of unneeded medicines when the illness for which they were prescribed is over.

(10) Finally, use safety packaging properly—by closing the container securely after use.

15. Q. **Is the poinsettia still considered to be extremely toxic?**

A. The poinsettia was blamed for a death in 1919; however, recent studies indicate that the plant is not as highly toxic as was thought at that time. It is unlikely that ingestion of a poinsettia would be fatal, although it may cause some gastric irritation and burning in the mouth. Many other plants are toxic also. If any indoor or outdoor plants are ingested, Poison Control Center or medical advice should be sought.

16. Q. **Lead in paint is a serious problem if a child should ingest it. What is being done to correct this problem?**

A. In the past, paints could—and did—contain much higher levels of lead. However, since 1971, the permissible amount of lead in consumer paint products has been reduced through a series of federal laws and regulations. This reduction also applies to paints or coatings on toys or articles intended for use by children. Children can *still,* however, become lead poisoned from eating flakes of old, heavily-leaded paint that is still present on walls and other surfaces in old houses and buildings. Workers and entire families face the same hazard when older homes and buildings are rehabilitated and sanding raises dust as leaded paint is removed from surfaces such as walls, floors, and ceilings.

17. Q. **Can miniature "button" batteries present a risk of childhood poisoning?**

A. Yes, miniature batteries may cause poisoning if accidentally swallowed. The batteries contain strongly alkaline chemicals which can cause internal chemical burns if they become lodged in the esophagus or intestinal tract. These tiny batteries (used in watches, calculators, cameras, and hearing aids) usually pass through the person without any problem. However, if a miniature battery is swallowed, you should contact your poison center, your physician, or the National Button Battery Ingestion hotline at 202-625-3333. In order to prevent ingestion of miniature batteries, consumers should keep the batteries out of children's reach and throw away old batteries, securely wrapped, after they have been removed from the appliance.

18. Q. **Are adults also at risk when they swallow medicines and household chemicals?**

A. Yes, poisonings happen to adults—especially older people—who cannot read labels or fail to follow instructions. Some people may confuse one medicine for another, especially if the light is not on when they reach for a medicine at night. Others may take too much of a medicine or may mix medicine with alcohol or other substances. Adults should take precautions to avoid poisonings:

(1) Always read the label and follow instructions when taking medicines. If any questions arise, consult your physician.

(2) Turn on a light at night when you need to take a medicine.

(3) Never mix medicines and alcohol, and never take more than the prescribed amount of medicine.

(4) Never "borrow" a friend's medicine or take old medicines.

(5) Tell your doctor what other medicines you are taking so you can avoid adverse drug interactions.

19. Q. **Where can I get more information on preventing poisonings?**

A. See the "List of Materials—1990" for available resources and their sources of supply. The list can be obtained from Secretary, Poison Prevention Week Council, P.O. Box 1543, Washington, D.C. 20013, or call 301-492-6580.

Continued from page 12

baccalaureate graduates to obtain a Doctor of Pharmacy degree while achieving all of the objectives of the program.

It is likely that as the transition process develops, other groups will be established to investigate particular issues. Overall supervision for the transition will reside in the Dean's Office of the School of Pharmacy.

For More Information?

School representatives are continuing to meet with pharmacists across the state. If your pharmaceutical organization would like more information or would like a presentation from representatives of the School, or if you would like to obtain more information, please contact Dr. Gary Oderda, Acting Assistant Dean, at 328-7650. The faculty and staff of the School of Pharmacy look forward to the challenge of developing this new curriculum, and solicit the help of all Maryland pharmacists to accomplish this goal.

Editors Note: The Maryland Pharmacist *is looking for articles from members giving their impressions, opinions and ideas on the school's move to the all-Pharm.D. program. Contact the MPhA office at (800) 833-7587 if you are interested in writing a short commentary or article.*

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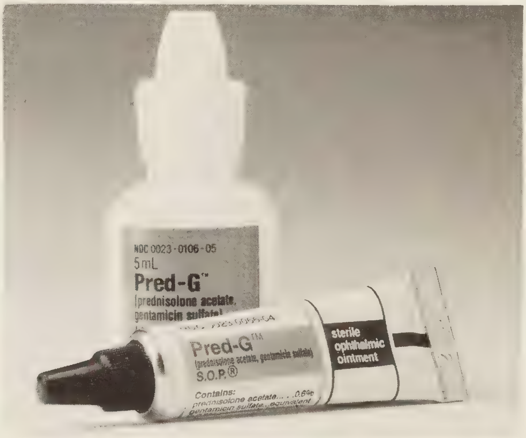
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Continuing Education

Continuing Education Quiz

The Maryland Pharmacist **FEBRUARY, 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by May 31, 1990. A continuing education certificate for one contact credit) will be mailed to you within 30 days. Please type or print clearly.

Name ____________________

Social Security Number ____________________

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Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? __________ minutes

Nicotine Addiction

1. All of the following are true statements EXCEPT:
    a. tolerance to nicotine has not been seen, even with long-time smokers.
    b. psychological and behavioral aspects of smoking meet the same classic criteria for true addiction to opiates.
    c. withdrawal elicits profound physical and psychological symptoms.
    d. tobacco addiction is reportedly the major cause of chemical dependence of Americans.

2. Which of the following, if any, is safer than traditional cigarettes?
    a. Low-nicotine cigarettes
    b. Smokeless tobacco
    c. Both low-nicotine cigarettes and smokeless tobacco
    d. neither low-nicotine cigarettes nor smokeless tobacco

3. Studies have confirmed that one year following smoking cessation, the number of people who had used Nicorette and were still abstaining from tobacco was:
    a. the same number as for the placebo.
    b. twice the number as for the placebo.
    c. four times the number as for the placebo.
    d. ten times the number as for the placebo.

4. The OTC smoking deterrent that imparts a metallic-sweet taste to the mouth when tobacco smoke is inhaled contains:
    a. magnesium sulfate.
    b. potassium chloride.
    c. silver acetate.
    d. sodium nitrate.

5. Which of the following statements is true?
    a. Nearly all nicotine absorbed through the lungs is transported to the brain.
    b. Nicotine blocks the release of norepinephrine from storage in the brain.
    c. Nicotine decreases the heart and breathing rates.
    d. Pipe smokers who inhale absorb significantly more nicotine than cigarette smokers.

6. The term that describes a person's inability to refrain from smoking after a period of abstinence is:
    a. nonabstinent.
    c. recidivism.
    b. noncompliant.
    d. reconstitution.

7. The ingredient contained in OTC smoking deterrents that is supposed to substitute for nicotine is:
    a. cubeb.
    c. lobeline.
    b. hyoscyamine.
    d. scopolamine.

8. The requirement for nicotine by smokers is best described as:
    a. biological.
    b. psychological.
    c. social.

9. Nicorette contains a/an:
    a. artificial analog of nicotine.
    b. natural extract of tobacco.
    c. synthetic chemical similar to nicotine.

10. Which of the following statements is true?
    a. Nicorette gum is buffered to pH 8.5 to assure maximal absorption.
    b. Nicorette gum should be chewed rapidly to enhance the release of nicotine.
    c. Hypersalivation enhances the amount of nicotine that will be absorbed through the oral mucosa.
    d. Nicotine that is swallowed after release from Nicorette will reach higher systemic levels than that absorbed through the oral mucosa.

Classified

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"Rx" LICENSE PLATES are still available through the Association. When you receive your license renewal form, contact Mary Ann at the Association (727-0746) for details. The plates say "Maryland Pharmacists Association" in addition to "Rx" and the number. This offer is open to members and their families only.

THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Santi V. Lusco at 254-1772.

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PHARMACY FOR SALE. A 35-year old established pharmacy available due to illness of owner. Located in historic district of Eastern Shore city, Purchase price: $ for $ inventory, plus profit. Long lease available. Write or contact MPhA for more information.

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The Fuss About Fiber: Fact, Fancy, and Fiction

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A New Rudder For the MPhA Ship

It is with great pleasure that I inform each of you that a new executive director has been named to head the staff of MPhA. After a long and arduous search process, the Board of Trustees has selected Mr. James Whitehead.

Jim comes to us from the American Academy of Otolarangology—Head and Neck Surgery, a national organization of physician specialists based in Washington, D.C. His outstanding expertise in the areas of membership recruitment, member service development and fund-raising activities will provide just the guidance that MPhA will need as it forges into a new decade.

I would like to take this opportunity to thank each member of the Executive Search Committee who gave freely of their time to review the more than 70 applications received for the position. Their dedication and support are an impressive display of the committment that Maryland pharmacists have made to the continued strength of our organization. The members of the Executive Search Committee were: Donald Fedder, Paul Jeffrey, Ilene Zuckerman, Elwin Alpern, Melvin Rubin, Brian Sanderoff, Bob Kabik, Gerry Freedenberg, and Arnold Davidov.

I know you will join me in welcoming Jim to MPhA.

Nathaniel Futeral, P.D.

President

Continuing Education

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Advising Consumers on Managing Cholesterol Part 1: Background, Diseases and Diet

by Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to:

1. explain the physiologic and pathologic roles of cholesterol in disease and in health;
2. list current recommendations for initiation of treatment of hypercholesterolemia; and
3. summarize current knowledge of benefits gained by lowering cholesterol levels.

in the service of pharmacy

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Objectives

At the conclusion of this lesson, successful participants should be able to:

1. select the physiologic functions of cholesterol;
2. identify the various lipoproteins and differentiate between them in their role in regulating blood cholesterol levels;
3. choose the results of important studies that have established the association between cholesterol blood levels and the risk of coronary heart disease; and
4. identify the major approach to the treatment of hypercholesterolemia.

Introduction

It has been known for many years that there is a positive link between high cholesterol blood levels and the incidence of coronary heart disease (CHD). Numerous studies over the years have shown that the higher the blood cholesterol concentration, the greater the chance for developing CHD.

As blood cholesterol levels are lowered, the death rate from myocardial infarction and CHD is likewise proportionately reduced. Today, we no longer ask whether high blood cholesterol levels should be treated. Rather, the question is, who should be treated, and how aggressively?

This lesson will provide background information to explain the physiologic and pathologic roles of cholesterol. The role of diet in moderating blood cholesterol concentration will also be discussed. Part II of this series will conclude the topic, concentrating on medical management of hypercholesterolemia.

Importance of Cholesterol

Physiological. Cholesterol is a waxy steroid that possesses many properties of fat. It is also a principle component of atherosclerotic plaque.

Cholesterol is essential for life. It forms the basis for vitamin D synthesis, and for manufacture of corticosteroids and bile acids. It is also required for myelin sheath formation. Children and adolescents are particularly sensitive to decreased cholesterol synthesis since it is necessary for their growth and development.

The body synthesizes about 70 percent of the cholesterol it needs. The remainder is provided by diet. Only about 7 percent of total cholesterol in the body at any one time is normally found in the blood. The rest is intracellular, where it undergoes its many biochemical functions.

Significant pathology results when the blood cholesterol is greater than 7 percent. Small reductions in blood cholesterol concentrations are correlated with significant improvement in reducing morbidity and mortality from CHD. In fact, a 1 percent reduction in blood cholesterol levels corresponds to lowering the chance for developing CHD by 2 percent.

The ideal cholesterol blood level is unknown. A value that has been suggested is 150 mg/dL. The average cholesterol level for Americans is reported to be 211 mg/dL. This figure is based in part upon epidemiologic data obtained from studies of people in other countries.

One such population is the rural Japanese. They have among the lowest rate of coronary heart disease in the world. It is interesting to note that when Japanese citizens migrate to America and assume a Western diet, their blood cholesterol levels increase to values similar to those of native Americans. Then, compared to Japanese citizens who remained in their native land, their death rate due to CHD is higher.

Pathological. Coronary heart disease is the primary cause of death in the U.S. and many other industrialized countries. Each year, approximately 1.5 million people in the U.S. suffer a myocardial infarction (MI). More than one-third of them die, regardless of treatment.

The pathological significance of cholesterol is that it can deposit along arterial walls, forming atherosclerotic plaque. When this occurs within an artery supplying blood to the heart, angina and MI can result. In the kidney, cholesterol-laden plaque can cause renal disease and hypertension. Likewise in the carotid arteries, the presence of plaque can lead to TIAs (transient ischemic attacks), formation of cerebral vascular disease, and other pathologies associated with reduced blood flow into the brain. And, plaque found in any artery can weaken the wall of that vessel, possibly leading to aneurysm with hemorrhage.

CHD development normally involves a latent period which spans several decades. During this time, atherosclerotic lesions gradually develop, initially appearing as fatty-streaking of coronary arteries. In time, the fatty streaking increases to the point where plaque appears, which can partially or completely occlude the artery lumen.

Plaque can also serve as the site for thrombus formation which may further occlude the artery. During the early stages when plaque is just beginning to form, the affected individual may not have symptoms of CHD. Later, symptom onset is usually sudden, beginning with angina or a myocardial infarction. Too frequently, sudden death is the tragic outcome.

Major Classes of Lipoproteins

There are four major lipoproteins that must be considered in order to understand the pathologic role of cholesterol. These are identified in Table 1.

Table 1

Major Lipoproteins and Their Functions

Chylomicrons	Transport dietary triglycerides during intestinal absorption
VLDL-cholesterol	Transports triglycerides synthesized by the liver
LDL-cholesterol	Transports cholesterol to the tissues; hypercholesterolemia usually reflects elevated LDL-cholesterol levels
HDL-cholesterol	Removes cholesterol from peripheral sites and brings it back to the liver for transformation into bile acids, or other disposal

Most cholesterol is transported through the blood on low density lipoproteins (LDLs). The higher the concentration of LDL, hence LDL-cholesterol, the greater the risk of CHD. Elevated levels of high density lipoproteins (HDLs) are believed to protect individuals against CHD. HDLs transport cholesterol away from tissues, back to the liver, to be converted into bile acids or other steroids, or to be eliminated from the body.

Today, the evidence is overwhelming that decreasing the amount of LDL-cholesterol in the blood is positively associated with reduced morbidity and mortality from CHD. However, the precise role of HDL-cholesterol is less well understood. Some evidence associates increased HDL-cholesterol levels with reduction in CHD. But this evidence is incomplete and less clear than data which correlate reduction of LDL-cholesterol concentration with decreased CHD.

Definitive Studies that Associate Cholesterol with CHD

A number of investigations published during the past several years have helped clarify the role of cholesterol in the pathogenesis of CHD. These studies were conducted over many years, and involved thousands of patients.

Framingham Study. Results of the Framingham Study (Figure 1) clearly illustrated that the concentration of blood cholesterol associated with a low incidence of CHD (as evidenced by a first MI) is significantly lower than previously believed. Blood cholesterol levels of approximately 100-180 mg/dL are associated with a low incidence of MI. As can also be seen in Figure 1, the relationship is "J"-shaped. Following a fairly flat curve at lower concentrations, as the level increases (above 230 mg/dL), the risk for MI also accelerates rapidly. As recently as the mid-1980s, many health professionals continued to believe that blood

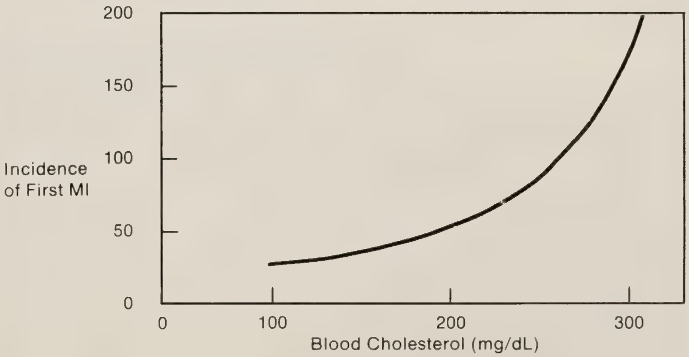

Figure 1. Relationship between blood cholesterol levels and CHD. Data from the Framingham Study.

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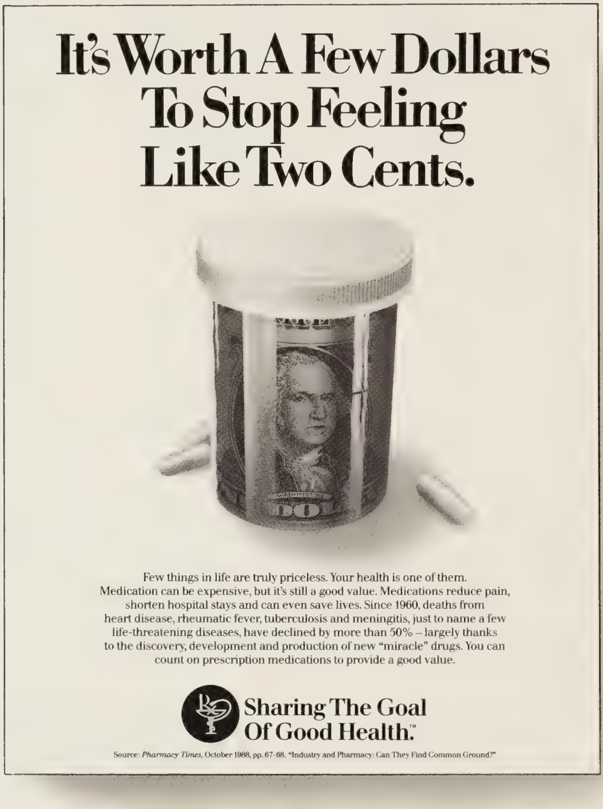

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cholesterol levels in the "mid-to-high-200s" were satisfactory for Americans. Today we know better; these higher figures are not healthy. In fact, the risk of MI is stated to be about four times greater at blood cholesterol levels of 300 mg/dL than at 200 mg/dL.

LRC-CPPT Study. In the Lipid Research Clinics - Coronary Primary Prevention Trial, 3806 men were divided into two groups. The only criteria for entry was that the subjects have no history of coronary heart disease, and a blood cholesterol level above 265 mg/dL. One group received cholestyramine (Questran), the other group a placebo resin. Both groups were placed on a low cholesterol diet. The study was double-blinded. Each subject was followed for a minimum of seven years; some of the first men to begin the trial were followed for nearly ten years.

Over the test period, as LDL-cholesterol was reduced, the risk for CHD was lowered. Specifically, for each 1 percent decrease in blood cholesterol, there was a 2 percent reduction in CHD risk. The importance of this investigation is that it demonstrated unequivocally that reducing cholesterol levels does reduce mortality from CHD.

Helsinki Study. This study involved 4,081 middle-aged men who had no history of CHD. Their mean cholesterol level was 290 mg/dL (at least 200 mg/dL was *not* HDL-cholesterol). They were randomly assigned to one of two groups. One group received gemfibrozil (Lopid) 600 mg twice daily, or a placebo. Treatment extended over a 7-year period.

The results demonstrated that treated patients had an overall 34 percent lower incidence of fatal and nonfatal MI and cardiac death. Mortality from CHD was 24 percent lower in the treatment group.

MRFIT Study. In the Multiple Risk Factor Intervention Trial (MRFIT), over 361,000 men were evaluated over a 6-year period. During that time, total blood cholesterol values were plotted against the number of deaths caused by CHD. There was a positive correlation between the plasma cholesterol level and number of cardiac deaths; the correlation was positive for all plasma levels of cholesterol.

Table 2

Cholesterol Treatment Cut Points*

		Cholesterol Levels (mg/dL)	
Age	**Recommended**	**Moderate Risk**	**High Risk**
20–29	<180	200–220	220+
30–39	<200	220–240	240+
40+	<200	240–260	260+

*NIH Consensus Conference (*JAMA* 253:2080, 1985)

When Should Treatment Begin?

Table 2 lists cholesterol values for selecting men and women for management of hypercholesterolemia. It can be seen that individuals aged 20-29 are at moderate risk for development of CHD when blood cholesterol levels exceed 200 mg/dL. They are likewise at high risk when the concentration exceeds 220 mg/dL.

An "Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults" reported to the National Cholesterol Education Program (part of the National Heart, Lung and Blood Institute). It published recommendations on blood cholesterol levels late in 1987. Specifically, the panel indicated that the total blood cholesterol concentration should be the basis for any further investigation. All persons with a total blood cholesterol level of 260 mg/dL or above, regardless of age, should be considered at high risk for CHD, and receive more intensive lipoprotein analysis. Individuals with borderline levels, identified as a total cholesterol concentration of 200- 239 mg/dL, who also have a history of CHD, or two CHD risk factors (Table 3) are also at high risk, and should receive further lipoprotein analysis. In any public screening programs, patients with blood levels of 200 mg/dL or above should be referred to a physician for further evaluation. On rare occasion, people will have elevated levels of HDL-cholesterol. This may be the cause of the increase in their total cholesterol value; it would not be associated with increased risk for CHD.

LDL-cholesterol concentration becomes the basis for therapeutic decisions. An LDL-cholesterol level of 160 mg/dL or above is considered to be high risk, so the individual should be treated. Persons with borderline LDL-cholesterol levels include those with a concentration of 130-159 mg/dL. They should also be treated if they have a personal history of CHD, or any two CHD risk factors.

The endpoints of therapy are as follows. Persons without a history of CHD or two risk factors should strive for LDL-cholesterol levels below 160 mg/dL. Individuals with a history of CHD, or those with two risk factors, should reduce levels to less than 130 mg/dL. Again, these figures apply to all individuals, regardless of age.

It is currently recommended that all adults over age 20 be checked for blood cholesterol levels at least once every five years. Persons with levels less than 200 mg/dL require no additional workup.

Concurrent with therapy, modifiable risk factors identified in Table 3 should be addressed, and corrected. For example, hypertension should be treated, smoking stopped, and excess weight lost.

Treatment of Hypercholesterolemia

Diet. Dietary control of hypercholesterolemia is the mainstay of treatment. For the majority of patients, diet alone will be sufficient.

The standard American Heart Association (AHA) diet is a starting point

Table 3

Risk Factors for Cardiovascular Disease

- Male sex
- Family history of CHD
- Cigarette smoking
- Hypertension
- Diabetes mellitus
- Obesity
- HDL less than 35 mg/dL
- History of cerebral vascular disease
- Occlusive peripheral vascular disease

for attempting to reduce high cholesterol levels. A patient should give the diet a six-month trial. If the LDL-cholesterol concentration is not reduced significantly during this period, the individual can start appropriate medication.

There are essentially two goals to the dietary control of hypercholesterolemia. These goals can be planned over three phases.

Phase 1 (referred to as the "Prudent Diet") is recommended for treatment of mild hypercholesterolemia. It includes decreasing total cholesterol intake from an average of 450 mg/day for Americans, to less than 300 mg/day. Fat ingestion should total no more than 30 percent of total calories. Normal fat intake by Americans is about 40 percent. The AHA recommends that the general population follow Phase 1.

More than half of dietary fat is saturated fat. Overall, the AHA recommends that saturated fat intake be decreased by about 50 percent. Additionally, it is recommended that polyunsaturated fat be increased by two- to threefold.

In **Phase 2**, cholesterol ingestion should be restricted to 200-250 mg/day, with total fat supplying no more than 25 percent of calories. Phase 2 is used to treat moderately severe hypercholesterolemia.

Phase 3 provides the lowest intake of cholesterol and fat. It restricts dietary cholesterol to a maximum of 100-150 mg/day, and fat ingestion not exceeding 20 percent of total calories.

Exercise. Next to diet, exercise is a preferred means to lower both total cholesterol and LDL-cholesterol concentration. It is also associated with increasing the HDL-cholesterol levels.

Alcohol. Alcohol in moderation, one drink a day, has been shown by some studies to lower LDL-cholesterol levels. When this quantity is exceeded, triglyceride levels can increase.

The Role of Fiber. Fiber has long been touted as an effective means to reduce both total cholesterol and LDL-cholesterol concentrations. Specifically, soluble fiber is more effective for this purpose than insoluble fiber. Soluble fiber includes pectins, gums, and mucilages. Dietary sources include fruits, oats, and legumes (beans). Numerous studies have demonstrated that increasing dietary intake of soluble fiber may be all that is needed to significantly lower elevated cholesterol levels.

The purported mechanism of action of soluble fiber is apparently at least twofold. First, fiber is fermented by intestinal bacteria to short-chain fatty acids. These are then absorbed through the hepatic portal system. In the liver, they suppress cholesterol synthesis.

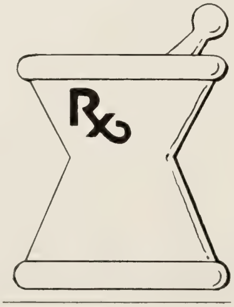
Second, soluble fiber in the bowel adsorbs bile acids, which in turn, reduces their reabsorption into the blood. When this occurs, more cholesterol is shunted toward production of bile acids and consequently, blood levels of cholesterol are reduced.

Consumer Advice

Consumers should understand the importance of knowing their blood cholesterol levels. In one recently-reported survey, fewer than 10 percent of consumers knew their own value. Fewer than half of all persons ever had their cholesterol checked.

Since dietary management of hypercholesterolemia is the cornerstone of therapy and will probably be tried before drug therapy, consumers should be urged to comply with their program. They should also know that dietary restriction *is* an effective means of lowering elevated cholesterol levels.

There are numerous brochures and pamphlets available on diets to reduce cholesterol blood levels that can be provided to interested consumers via pharmacsts. Local chapters of the American Heart Association can provide some of these.



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Dickinson's Pharmacy

by Jim Dickinson

Repeal Mandatory Substitution! ". . . APhA has been waging a vigorous campaign in an attempt to return to the pharmacist the authority and professional responsibility to select the source of comparable multisource drug products, and thereby produce drug savings for the patient."

The late APhA visionary leader, William S. Apple, wrote those words to the *Wall Street Journal* in 1978. Nearly 12 years later, all 50 states and the District of Columbia recognize the pharmacist's right to substitute—but history has given Apple's vision of an "authority" and a "professional responsibility to select" a backhanded slap.

Today, twelve states usurp his "authority" goal by *requiring* pharmacists to substitute an available lower-priced generic equivalent for a prescribed brand name drug. The people who live in those states account for one-fourth of the country's population.

It's apparent why a "responsibility" might be written into law as a "requirement" (presumably with penalties)—some pharmacists can't be trusted to accept the responsibility.

My file on the history of substitution contains numerous yellowing press clippings from investigative journalism exposures of instances where pharmacists did not substitute when permitted by the prescription to do so. While you can think of legitimate, innocent explanations in many cases (e.g., out-of-stocks, patient preference, etc.), investigative reporters can't be expected to do the same.

Hence the state laws that were written in Florida, Hawaii, Kentucky, Massachusetts, Mississippi, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Washington and West Virginia. This is a time-honored way for legislatures to protect citizens from getting ripped off by "greedy pharmacists."

To the outside critic of pharmacy practice, a prescription drug is a competitively priced commodity like a grapefruit or a carton of cigarettes, and the consumer is *entitled* to the lowest possible price. There aren't any other considerations.

The result of this attitude is always a dilution of pharmacy's professional aspirations. Pharmacy can't be trusted to pass on the lower price, so you mandate it.

Which raises the idea of a professional "authority" and "responsibility" to counsel patients. Washington, California, Texas, and a few other states *mandate* patient counseling by pharmacists.

It's impossible to police, of course—unlike mandatory substitution—but it serves as a public declaration of societal intent, and that should carry a fair amount of persuasive power.

In recognition of that power, a resolution calling for mandatory counseling laws in all states was passed without a whimper at the NARD annual convention in San Antonio in November.

Some argued that making a professional service *mandatory* is a contradiction. How can we continue to call ourselves professionals if we have to make this mandatory? But a profession that has, in one-fourth of the country, yielded to laws mandating that it pass along a price break should be able to swallow this.

When you think a little bit about substitution and counseling, all in the same context—i.e., each as a mandated act—there seems to be something incongruous about it.

Counseling embodies the discussion of choices and therapeutic outcomes. For example, you have to address the consequences of not doing what the regimen requires, and the ways of reminding oneself to comply with the regimen ("take with meals").

Substitution involves very little discussion and, mostly, a choice that is no choice—"Do you want to pay more or less?"

The former has the true hallmarks of a real profession, while the latter is the verbal patter of a clerk responding to checkpoints on a list (formulary).

The former is of substantial physicial value to the patient as well as to the comfort of the patient's family and next-of-kin; the latter has transitory economic value that, while not to be scorned, is hardly in the same ballpark.

Indeed, when you make substitution mandatory, as a growing number of health plans and the laws of 12 states do, you may burden both pharmacist and patient with a wasteful routine involving the prescriber as well, if the substitution is not desired. Admittedly, getting prescribers to certify "do not substitute" may not be a huge burden every day in the average pharmacy—but whenever it occurs it surely detracts from the intended savings.

It's very doubtful if Bill Apple, when he began the crusade for pharmacy's "authority" and "responsibility" to substitute in 1970, foresaw such professionally degrading consequences.

On the other hand, as one who knew him, I dare to say he would not have thought mandatory counseling to be professionally degrading—and neither did most of the pharmacists at NARD in San Antonio.

It's time for Apple's profession to start a new crusade—to swap a professionally demeaning trend to mandatory substitution, for a professionally enhancing one—mandatory counseling.

This feature is presented on a grant from "Dickinson's Pharmacy—The Independent Voice," an 8-page practical monthly newsletter available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45.

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Dietary Fiber: The Indigestible Nutrient

Dietary fiber has been an essential part of the diet of humans since the dawning of mankind. Surely, one of the earliest references to high-fiber food must be the story in Genesis of Esau selling his birth right for a "pottage of lentil."

While most people who lived in Biblical times ate whole meal foods, white flour was available for aristocrats who could afford it. However, the benefits of fiber were not ignored. Hippocrates, the father of medicine, advised his patients to eat whole meal bread to "clear up the gut."

The picture changed around 1870 when the Industrial Revolution made refined flour affordable to the masses for the first time. As consumption of white flour rose, the use of whole meal flour declined, and in a delayed but mirror-like reaction, the incidence of digestive diseases increased.

For example, diverticular disease was virtually unknown at the beginning of the twentieth century. By 1920, it was commonly found in most industrialized countries and the incidence of diagnosed cases was rapidly increasing. Since symptoms of diverticular disease generally take about forty years to develop, many experts believe this was no coincidence.

These observations gained credibility through the studies of Denis Burkitt, M.D., a British physician who observed that the rural Africans he treated in Uganda rarely had digestive diseases, coronary heart disease or obesity. Their diet consisted primarily of vegetable fiber with little animal protein, fats, refined sugar or refined grains.

Early research on fiber was hampered by poor analytical methods. One, which was introduced in Germany over a century ago, treated foods with solvent, acid, base and hot water.

"Anything that still had the will to live was called fiber," according to David Kritchevsky, Ph.D., professor of biochemistry and surgery at the University of Pennsylvania School of Medicine and associate director of Philadelphia's Wistar Institute. The test did not in any way duplicate what happens to fiber in the digestive system. "It got rid of all the soluble fiber, and what you had left was mostly cellulose," said Dr. Kritchevsky.

Measurements derived from this method, called crude fiber, are still used in some charts showing fiber contents of various foods. New methods of analysis now allow scientists to identify and study all of the components of dietary fiber, and measurements based on these tests are much more accurate for determining dietary fiber content of food.

According to the American Dietetic Association, dietary fiber is defined as material from plant cell walls that is resistant to digestion by human digestive enzymes. Fiber can be grouped into two categories, water soluble and water insoluble. Insoluble fiber components include cellulose, lignins, and many hemicelluloses. Soluble fiber components include pectin, gums, mucilages, algal substances and some hemicelluloses.

Most fruits, vegetables and grains contain both soluble and insoluble fiber. For instance, an apple with peel contains approximately 30 percent soluble fiber and 70 percent insoluble fiber. Zucchini, on the other hand, is 46 percent soluble fiber and 53 percent insoluble fiber.

To further complicate the picture, the amount of fiber in a given food may vary with the age of the plant, the part of the plant consumed and the species of the plant. For purposes of developing a healthful high-fiber diet, though, it is enough to understand how the major fiber categories—soluble and insoluble—function and know in which foods they are found.

Insoluble Fiber

As the name implies, insoluble fiber absorbs little water as it moves through the digestive system. It adds bulk only in the lower intestine rather than the entire digestive system. Most experts agree that it tends to speed transit time, the amount of time for total passage of food through the digestive system.

Insoluble fiber can be found in whole grains, wheat and corn bran, whole grain cereals, some fruits and vegetables. Wheat bran, perhaps the most familiar fiber-rich food, is largely insoluble fiber.

Soluble Fiber

Soluble fiber absorbs large amounts of water, adds bulk in the stomach, and works throughout the digestive system. Bacteria in the colon cause soluble fiber to ferment, which some researchers believe may inhibit the production of cholesterol and speed the clearance of low-density lipoprotein (LDL or "bad" cholesterol) from the system.

Various kinds of soluble fiber differ in their effect on transit time. While some tend to slow the transit time, other soluble fiber sources can speed or normalize transit time.

Soluble fiber is found in oats, dried beans, psyllium, peas, lentils, some fruits and vegetables.

Amount of Fiber Required

The kinds of food Americans eat has changed significantly in the last 70 years, according to the American Dietetic Association (ADA). The ADA states that the percentage of calories from carbohydrates has decreased from 56 percent to 42 percent, while the percentage of calories from fat has increased from 32 percent to 43 percent.

Further, they point out that estimates of consumption of dietary fiber by adults in the U.S. ranges from only 11.1 to 23.3 grams per day.

There is no recommended daily allowance (RDA) for dietary fiber, but the ADA suggests daily consumption of 20 to 35 grams from a wide variety of sources. This is consistent with recommendations from various other organizations such as the National Cancer Institute.

Particular difficulties lie in recommending type and specific amounts of dietary fiber for children. High-fiber diets that are low in calories may be inadequate for children who have smaller stomach capacities and need more calories than adults, according to the American Academy of Pediatricians. They do recommend, however, that children should consume dietary fiber from a wide variety of sources, along with adequate fluids.

Addition of dietary fiber to the diet should be made gradually and should be accompanied by adequate fluid intake. Adding too much fiber too quickly can cause bloating, flatulence, cramps or diarrhea. Gradual increases in dietary fiber allow the digestive system to adjust properly and assume a natural regularity.

1807

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The Digestive System and How it Works

Digestive diseases affect more than one-half of the U.S. population sometime during their lives and result in approximately 200,000 absences from work each day, according to the National Digestive Disease Advisory Board. Approximately 13 percent of all admissions to general hospitals and ten percent of all surgery are for treatment of digestive diseases. The costs total some $50 billion annually, $17 billion of that for direct medical expenses.

While the process of digestion seems automatic, it is complicated and cannot be taken for granted. For the most part, the digestive system is a loyal servant, providing enjoyment in the delight of a tasty meal and nourishment for the maintenance and well being of the body.

The digestive system is also called the alimentary canal or gastrointestinal (GI) tract. Its chief function is to break down foods into a simple diffusible form that can be absorbed by the body.

Digestive processes are both mechanical—in which food is ground to particles, liquified, and moved at the proper speed—and chemical, in which enzymes assist in breaking the food down into its simple components.

The total digestive system is about 30 feet long, and digestion and absorption of a normal meal takes about 24 hours. Material that is not digested is excreted, and the total time required for material to pass through the entire digestive system is called transit time.

Mouth

The digestive process begins with the first bite. When food enters the mouth, impulses in the tactile nerve endings set up the motions of chewing and swallowing. The teeth grind the food into small particles, and the salivary glands excrete juices that lubricate the food mass and smooth its passage into lower parts of the digestive tract. In addition to its critical role in speech, the tongue is also important in chewing and swallowing.

The chemical process also begins in the mouth with the breakdown of carbohydrates into simple sugars. However, the time that food is in the mouth is short and action of the enzyme continues after the food is swallowed.

Esophagus

The food mass passes quickly through the esophagus to the stomach, a process that takes about four to eight seconds. Presence of food in the esophagus initiates peristalsis action, the coordinated rhythmic contractions of smooth muscles that force food through the digestive tract.

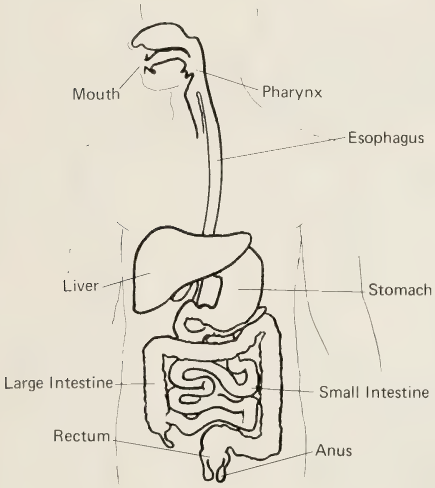
Stomach

After passing through the cardiac sphincter, a valve located at the end of the esophagus, the food mass enters the stomach, a hollow, muscular structure with the average capacity of about one quart. Peristalsis action, independent of that in the esophagus, churns and mixes the food with gastric juices, one of which is hydrochloric acid. This continues the digestion of starches and carbohydrates and begins the breakdown of protein and fat. There is little absorption in the stomach because the food is not yet in diffusible form.

Foods rich in carbohydrates leave the stomach in a few hours. Protein-rich foods are slower, and fats are the last to leave the stomach.

The process in the stomach results in a semifluid known as chyme, some of which will be absorbed as nutrients. The remainder, including the indigestible dietary fiber, will be eliminated.

The pylorus, a valve located at the end of the stomach, regulates the movement of chyme into the intestines a little at a time. Within two to six hours, all food from the stomach has emptied into the small intestine.



THE DIGESTIVE SYSTEM

Small Intestine

The small intestine is a narrow tube about 23 feet long. The inner surface is composed of mucus membranes in circular folds which are covered with small protuberances, called villi. The total inner surface is 600 times greater than the outer surface.

The chyme is mixed with pancreatic juices, bile from the liver and other intestinal juices to complete the digestive process. The peristalsis action is slower in this phase to allow time for absorption. Approximately 95 percent of absorption takes place in the small intestine through the villi.

The bulk added by dietary fiber increases the lumen, or inside diameter, of the small intestine thus decreasing internal pressure and allowing material to move through more easily. Research also shows that at this point, soluble fiber may delay the absorption of glucose, a help for diabetics, and may also lower serum cholesterol and triglycerides.

Large Intestine

The materials that remain in the small intestine after absorption move to the large intestine, which is about five feet long and larger in diameter.

There is little chemical action in this phase, and the main function of the colon is to absorb the water and electrolytes and prepare waste material for elimination.

If materials in the colon move too slowly, there is excessive water absorption and the waste becomes dry and hard. Eliminations are less frequent and difficult, a condition known as constipation. If movement through the colon is too rapid, there is less absorption of water, resulting in more frequent and loose evacuations, called diarrhea.

Materials remain in the colon about 36 hours preparing for elimination. Bacteria that are normal inhabitants of this area ferment the soluble fiber and create short-chain fatty acids, which according to some researchers, may inhibit synthesis of cholesterol in the liver. The bulk added by both soluble and insoluble fiber helps to produce stools which are easily eliminated through the anal canal.

Healthy Digestion

The fuel that the body needs for energy and for cell building and repair comes from the nutrients absorbed in the digestive process. Therefore, the general health and well being of an individual depend on a healthy digestive system.

To facilitate good digestion, experts advise drinking eight or more glasses of water a day. Besides the other bodily functions that require it, water plays an essential role in digestion. Adequate water is especially important with a high-fiber diet.

Equally important to the digestive process is daily exercise. Doctors frequently recommend that people with digestive problems include exercise as part of their therapy.

Foods included in the daily diet play a large part in facilitating the digestive process. While foods from all four food groups are required, special attention should be paid to getting proper amounts of vegetables, fruits and whole grains.

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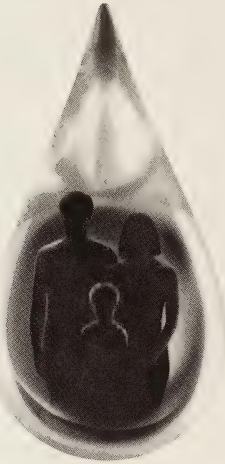

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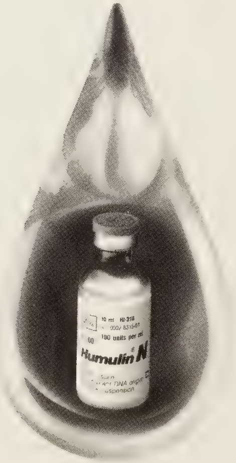

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The benefits of dietary fiber to the digestive process are numerous, both in the mechanical and chemical stages. Generally, Americans are found to consume only 11.1 to 23.0 grams of fiber a day—far below the 25 to 35 grams recommended by most health organizations. Although dietary fiber should ideally come from choice of foods, some people may find it necessary to use a dietary fiber supplement.

Digestion and the Aging Process

One of the most common complaints that appears as people get older is trouble with the digestive system. This could have a number of causes, some of which can be eliminated.

The diet of older people is sometimes less than optimal, according to doctors. The aging process tends to lessen the sensitivity of taste buds, and older people tend to eat less because food doesn't taste as good as it used to. They may have problems chewing because of tooth loss or ill-fitting dentures. Physical disabilities may make shopping and preparation of food too difficult. They may also be taking medications that lessen their appetite.

In addition, doctors maintain that many older people get too little exercise, especially when there is a physical condition that makes it difficult.

Medical authorities maintain that the digestive system is quite resilient. Given a generally healthy diet, adequate water and exercise, the digestive system should function well throughout the lifetime.

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Studies Show Benefits of Dietary Fiber for Wide Range of Medical Conditions

Changes in lifestyle brought about as a result of the Industrial Revolution have had significant impact on the health of Americans. With advances in mechanization, people have become far more sedentary, and the availability of processed and refined foods have dramatically reduced the consumption of natural sources of nutrition.

Many scientists believe that these changes are directly related to many of the diseases that are causing early death and reducing overall general health of the population.

"The hypothesis that many of the diseases characteristic of Western culture result from alterations in lifestyle, and from changes in diet in particular, is consistent with epidemiological and experimental evidence," said Denis Burkitt, M.D., the award-winning researcher and Fellow of the Royal Society in Great Britain. "A deficiency in fiber intake is the change incriminated most for the development of gastrointestinal disease."

As the public becomes more aware of the general benefits of dietary fiber, medical experts are increasingly prescribing a high fiber diet and fiber supplements for the management of certain disease states. While many of these diseases are long-term, increased fiber may improve these conditions or help bring them under control.

Constipation

Constipation may occur at any age, but according to the National Institute on Aging, it is five times more likely to affect older people. The condition occurs when materials in the large intestine move too slowly. Too much water is absorbed and the fecal matter becomes dry and hard.

Poor diet, inadequate fluids and lack of exercise are cited by doctors as the most common causes of constipation. It can also result from use of drugs prescribed for other conditions.

In an effort to medicate themselves, many people take harsh stimulant laxatives. These laxatives are often not necessary and may be habit-forming.

For decades, doctors have been prescribing dietary fiber to treat constipation. One of the most popular choices is wheat bran which is primarily insoluble fiber and adds bulk only in the lower gastrointestinal tract. Some people find straight wheat bran difficult to tolerate and somewhat tasteless as a regular part of the diet.

Continued on page 19

Hire the Older Worker Week

“Hire the Older Worker Week”—March 13–March 17, is a week set aside to emphasize the benefits and values of hiring the older worker. Governor William Donald Schaefer will issue a Proclamation and there will be T.V. and printed announcements.

The future will hold great challenges as the population of Maryland ages and moves into the 20th century. By the year 2000, Maryland will have 834,000 older individuals, representing a 45% increase in 60+ population in twenty years. Also, by the year 2000, older individuals over the age of 60+ will constitute about 17% of the state's population. Conversely, the younger population is decreasing so that the number of younger persons who “usually” comprise the “working population” will not be available.

Tomorrow's workplace will want and need older workers. To prepare for this changing workforce we all need to:

- Promote the training and/or retraining of the older worker
- Coordinate efforts with other government and private industry who provide job training and placement
- Encourage the redesign and restructuring of jobs to best benefit both the employer and employee
- Provide the options of flex time, job-sharing, a reduced work week and/or mini shifts to best utilize time for the employer and accommodate the skills of the mature worker.

Many older workers wish to join or rejoin public or private workplaces. Employers have found their older employees to be stable, reliable, punctual, dependable, conscientious and productive.

Those persons age 55 and over who wish to explore the possibilities of entering the workforce should contact their local Senior Information and Assistance Office for guidance, or call the Maryland Office on Aging for further information at 225-1100 or 1-800-AGE-DIAL

TABLE 1
MARYLAND OFFICE ON AGING

Area Agencies on Aging

COUNTY	CONTACT PERSON	ADDRESS	TELEPHONE
ALLEGANY CO.	Terry Froelich Director	Allegany County Human Resources Development Commission, Inc. Area Agency on Aging 19 Frederick Street Cumberland, MD 21502	301-777-5970 Fax-777-1352
ANNE ARUNDEL CO.	Carol Baker, Ph.D. Director	Anne Arundel Co. Area Agency on Aging Arundel Center-North 101 N. Crain Highway Glen Burnie, MD 21061	787-6707 FAX# 787-0338
BALTIMORE CITY	Neetu Dhawan-Gray Director	Baltimore City Comm. on Aging and Retirement Education 1114 Cathedral Street Baltimore, MD 21201	396-4932
BALTIMORE CO.	Gloria Albinak Director	Baltimore Co. Area Agency on Aging 611 Central Avenue Towson, MD 21204	887-2400 FAX# 887-2159
	Barbara L. Gradet Director	Baltimore Co. Dept. of Aging 611 Central Avenue Towson, MD 21204	887-2107
CALVERT CO.	Bettina Dubas Director	Calvert Co. Office on Aging 450 West Dares Beach Rd. Prince Frederick, MD 20678	301-535-460 (Metro-D.C.) 301-855-1170 Fax-535-6035
CARROLL CO.	Jolene Sullivan Administrator	Carroll Co. Office on Aging Schoolhouse Avenue Westminster, MD 21157	876-3363 Fax #848-0003

CECIL CO.	Wendy M. Biggs Director of Aging	The Board of County Commissioners of Cecil County Room 101 County Office Building Elkton, MD 21921-5970	301-398-0200 301-658-4041 Fax-398-2819
CHARLES CO.	Karen Murphy Chief of Aging	Charles Co. Office of Community Services Star Route 1 Box 1144 Port Tobacco, MD 20677	301-934-9305 Fax 645-0543
FREDERICK CO.	Patricia Throne Director	Frederick Co. Commission on Aging 520 N. Market Street Frederick, MD 21701	301-694-1605
GARRETT CO.	Adina Brode Director	Garrett Co. Area Agency on Aging P.O. Box 449 Oakland, MD 21550	301-334-9431 Fax-334-5000
HARFORD CO.	Jim Macgill Director	Harford Co. Office on Aging 145 N. Hickory Avenue Bel Air, MD 21014	879-2000 X331
HOWARD CO.	Vivian Reid Director	Howard Co. Office on Aging 9250 Rumsey Road Columbia, MD 21045	992-2327 Fax-992-2032
LOWER SHORE (MAC, INC.) Dorchester Co. Somerset Co. Wicomico Co. Worcester Co.	Margaret Bradford Executive Director	MAC. Inc. Area Agency on Aging 1504 Riverside Drive Salisbury, MD 21801	301-742-0505
MONTGOMERY CO.	Elizabeth Boehner Director	Division of Elder Affairs Dept. of Family Resources 101 Monroe Street Rockville, MD 20850	301-217-1120 Fax 294-8762
PRINCE GEORGE'S CO.	Sue Ward Director	Prince George's Co. Dept. of Aging 5012 Rhode Island Avenue Hyattsville, MD 20781	301-699-2670 Fax 699-2845
	Antoinette Samuel Planning & Program Development	Prince George's Co. Dept. of Aging 5012 Rhode Island Avenue Hyattsville, MD 20781	
QUEEN ANNE'S CO.	Sue Leager Director	Queen Anne's Co. Dept. of Aging 208 N. Commerce Street Centreville, MD 21617	301-758-0848
ST. MARY'S	Eugene Carter Director	St. Mary's Co. Office on Aging Garvey Senior Center P.O. Box 653 Leonardtown, MD 20650	301-475-4505
UPPER SHORE (USA) Caroline Co. Kent Co. Talbot Co.	Gerald E. Webb Executive Director	Upper Shore Aging, Inc. 400 High Street Chestertown, MD 21620	301-778-6000 Fax 778-3562
WASHINGTON CO.	Frederick F. Otto Acting Director	Washington Co. Area Agency on Aging Alexander House 9 Public Square Hagerstown, MD 21740	301-790-0275

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Hemorrhoids

Abnormal and permanently distended veins in the lower rectum or anus are known as hemorrhoids. This common disease which affects fully half of all adult Americans, frequently occurs among people who are chronically constipated. It may also appear during pregnancy, or as a result of prolonged sitting.

While it is not known if a fiber-rich diet can prevent hemorrhoids, many doctors recommend an increase in dietary fiber to ease the symptoms. In fact, some 50 percent of all hemorroidal abnormalities referred to colon-rectal surgeons can be alleviated by the addition of bulk to the patient's diet, a recent article in *Consultant* stated. Bulk laxatives, encourage soft, moist bowel movements which ease the discomfort of hemorrhoids.

Diverticular Disease

Considered by most experts to be a disease of the twentieth century, diverticular disease affects 10 percent of people over 40 and nearly half of people over 60, according to government estimates.

The primary characteristic of this condition is the presence of small sac-like pouchings along the walls of the colon. When these balloon-like sacs, indicating diverticulosis, are present, an individual may experience constipation, diarrhea, abdominal pain or excessive gas, and in rare cases, rectal bleeding.

A complication of diverticular disease, diverticulitis, occurs when one or more diverticula become irritated or infected. Symptoms usually include pain, generally in the lower left side of the abdomen, elevated temperature, nausea, vomiting, changes in bowel habit, and in some cases, rectal bleeding.

At one time, accepted clinical practice was a low-residue diet to "rest" the bowel. Now most doctors recommend increased dietary fiber which has been shown to reduce internal pressure in the colon thereby retarding progression of the disease.

Irritable Bowel Syndrome

Irritable bowel syndrome is characterized by the irregularity of muscular contractions which normally move waste material through the colon, resulting in diarrhea, constipation, or both. Generally accompanied by a high level of emotional disstress, it is usually diagnosed between the ages of 20 and 40.

Many physicians recommend a high-fiber diet for the management of irritable bowel syndrome.

"In general, a high-fiber diet is directed at increasing the volume and weight of the residue that reaches the distal colon, increasing the gastrointestinal motor function in those patients where it has been decreased, and decreasing intraluminal colonic pressures in those patients with increased sigmoidal pressure," said Gerald Friedman, M.D., associate clinical professor of medicine, the Mount Sinai School of Medicine.

To increase bulk in the diet, Dr. Friedman indicates that his personal preference "is the addition of measured doses of bran or plantago seed, which allows for greater ease in individual dose adjustment."

Cardiovascular Disease

About 60 million Americans aged 20 years and older are candidates for medical advice and intervention for high levels of blood cholesterol, according to a recent report published in the *Journal of the American Medical Association* based on an analysis by the U.S. Centers for Disease Control. Nearly a million Americans, about half of all mortalities, die annually from cardiovascular diseases, according to the American Heart Association, and they estimate that $88.2 billion will be spent in 1989 on treatment of cardiovascular diseases. High blood cholesterol levels have been shown to be directly related to the development of coronary heart disease. Lowering the levels of blood cholesterol, reduces the number of deaths and incidence of coronary heart disease, the report added.

While this new information carries an inherent warning for those at risk, recent studies are offering new solutions for the problem. Research conducted by Dr. James W. Anderson, University of Kentucky and VA Medical Center, suggests that diets rich in soluble fiber can lower blood cholesterol up to 19 percent. He points out that dietary measures avoid the considerable side effects associated with some cholesterol-lowering drugs.

A comparison study of the literature by Dr. Anderson revealed that those products high in soluble fiber were most effective in lowering serum cholesterol. Exactly how this works is unclear, but Anderson cites the popular hypothesis that fibers bind bile acids and cholesterol which decreases their absorption in the intestines and results in more bile acids being eliminated.

Among the food products most effective in lowering cholesterol are dried beans and oat products. Psyllium, which is primarily soluble fiber, has been shown to lower the low-density lipid (LDL) levels as well as the total cholesterol levels.

Consensus among many health organizations points to the effectiveness of reduced fat intake and increased complex carbohydrate and dietary fiber to lessen the risk of coronary heart disease.

Diabetes

An estimates 11 million Americans are believed to have diabetes mellitus, a metabolic disorder resulting from lack of insulin or defects of the insulin receptors, according to the American Diabetes Association. Moreover, they state that 500,000 new cases are diagnosed each year. Maintaining control of the disease may decrease its symptoms and retard progression of the disease and its related disorders, doctors say.

Concluded on page 20

In the 1970's attention was focused on the therapeutic advantages that increased dietary fiber offers for persons with diabetes. Dr. James Anderson, University of Kentucky first created the HCF (high carbohydrate high fiber) diet in 1974, and reported that results were impressive in individuals with both type I and type II diabetes.

Increased dietary fiber appears to improve control of blood glucose concentration, delay glucose absorption, decrease blood pressure, decrease serum cholesterol concentration, and reduce insulin requirements, according to a report by the American Diabetic Association.

Colon Cancer

The American Cancer Society estimates that there will be more than 107,000 new cases of colon cancer this year. In spite of public education and faster, more accurate methods of detection, the number of reported cases of colon cancer is increasing.

To combat this serious health threat, The American Cancer Society has begun recommending an increase of dietary fiber and a reduction of fat in the diet. These recommendations are based on growing evidence that diet is significant in the incidence of colon cancer.

"Epidemiological data from different populations have suggested positive relationships between the incidence of colon cancer and fat intake and a negative relationship with dietary fiber consumption," states Dr. David J. A. Jenkins, University of Toronto. He adds that the difficulties in pinpointing the exact cause of colon cancer and of developing preventative measures, stem from the lack of knowledge of most aspects of the physiology of the human colon.

"Until these issues are more clearly resolved the epidemiological leads would point to low fat diets rich in less processed starchy foods with increased fiber as possible protection," he said.

While most experts believe that dietary fiber may be an inhibitor of colon cancer, how this occurs is not fully understood. One popular hypothesis listed in a report by the American Dietetic Association, suggests that by increasing fecal bulk, dietary fiber may dilute potentially carcinogenic agents in the stool, and decrease their ability for contact with the colon. Additionally, it is believed that fiber may bind the potential carcinogens and excrete them with the feces, allowing less time for contact.

The conclusion of the American Dietetic Association is that "it seems prudent to recommend an increased intake of complex carbohydrates and fiber and curtailment of fat intake."

Obesity

One in four adults—about 34 million Americans—are overweight by 20 percent or more, according to a report by the National Centers for Disease Control. Less than half of them are doing anything about it. Most researchers agree that obesity is implicated in the development and progression of cardiovascular disease, hypertension and diabetes. It also aggravates other physical conditions such as arthritis.

Increasing dietary fiber helps to promote weight loss by increasing satiety and promoting a feeling of fullness. In studies by Dr. James Anderson, University of Kentucky, it was noted that individuals placed on a high-fiber diet were able to lose weight and keep it off over a long period of time.

High fiber diets cause weight loss for a number of reasons, according to Dr. Anderson. It takes longer to eat high-fiber food, increasing satiety and satisfaction. High-fiber food slows gastric emptying, contributing to a feeling of fullness. Serum insulin that stimulates the appetite is lowered by dietary fiber, resulting in decrease appetite. Since nutrients are less well absorbed from high-fiber foods, they provide slightly fewer calories than comparable low-fiber foods. In addition, the absorption and digestion of high-fiber foods may use more energy.

While most experts feel that the high-fiber diet may provide new possibilities for weight loss and maintenance, they agree that the subject needs further investigation.

All Fiber Supplements Are Not Equal

As the *Harvard Medical School Health Letter* reports "High-fiber diets have been recommended as 'good for what ails you'—virtually from tooth decay to ingrown toenails." One danger in crediting dietary fiber as beneficial for so many varied ailments may be that the general public will begin to discount what they hear as "hype" or "marketing strategy." They may then tune out the news that dietary fiber is beneficial for good health.

While increased fiber intake is certainly appropriate for most Americans, experts consistently urge healthy individuals to add fiber through a well-balanced diet. For those who are unable to get an adequate fiber intake through diet alone or those who are sick or at risk of certain illnesses, doctors recommend a dietary fiber supplement.

In choosing a fiber supplement, it is important to use one that will provide the right dose of dietary fiber in the most convenient and natural way. As with any well-balanced diet, individuals who take a fiber supplement should be sure to drink at least eight glasses of liquid a day. This not only aids digestion, but provides adequate liquids to insure maximum results from increased dietary intake.

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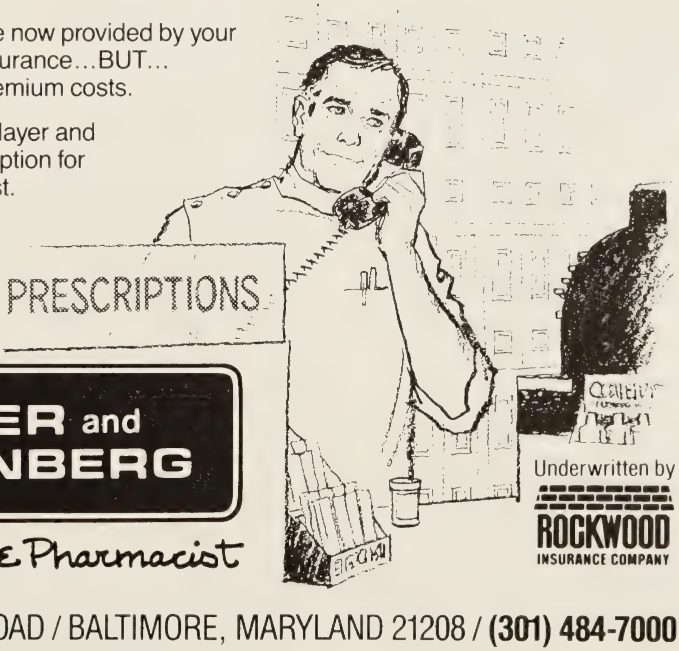

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2. **Your Child and Household Safety**

   (A monograph by Jay M. Arena, M.D. Discusses continuing need to protect children from potentially harmful substances and circumstances.)

   $1.00 each. Special rate is available with name imprinted on orders of 1,000 or more upon request. Published and distributed by Chemical Specialties Manufacturers Association, Inc., Suite 1120, 1001 Connecticut Avenue, N.W., Washington, DC 20036.

3. **Home Safe Home**

   (Tips for parents on how to protect young children in the home environment. Spanish versions available.)

   Up to 100 copies free. Ask for information on larger orders. The Soap and Detergent Association, 475 Park Avenue South at 32nd Street, New York, NY 10016.

4. **The Medicines Your Doctor Prescribes—A Guide for Consumers**

   (Tips on how to insure safe, proper use of prescribed medicines. Available in Spanish and English. 10 pages.)

   Up to 10 copies free. Additional supplies, $10 per hundred. Pharmaceutical Manufacturers Association, 1100 Fifteenth Street, N.W., Washington, DC 20005.

5. **Substance Abuse: Signs and Symptoms**

   (Lists the physical signs and behavioral characteristics associated with abuse of alcohol and other substances. Available in Spanish and English.)

   Single copy free. Pharmaceutical Manufacturers Association, 1100 Fifteenth Street, N.W., Washington, DC 20005. *Additional copies, $7.50 per hundred. JP Printing, 3615 Wisconsin Ave., N.W., Washington, DC 20016.*

6. **Substance Abuse: Drug and Chemical Chart**

   (Provides information on substances used for non-medical purposes such as alcohol and other drugs. Available in Spanish and English.)

   Single copy free. Pharmaceutical Manufacturers Association, 1100 Fifteenth Street, N.W., Washington, DC 20005. *Additional copies, $7.50 per hundred, JP Printing, 3615 Wisconsin Ave., N.W., Washington, DC 20016.*

7. **Medicine Labels and You**

   (A large-print, two-color brochure explaining the various elements in labels of nonprescription medicines and their importance to safe and effective use of these products.)

   Available free, single or in quantity. Nonprescription Drug Manufacturers Association, Public Affairs, 1150 Connecticut Ave. N.W., #1200, Washington, DC 20036.

8. **Ten Guides to Proper Medicine Use**

   (A brochure describing steps for consumers to follow when buying and taking prescription and nonprescription medicines.)

   One copy free; larger quantities 50 cents each. Council on Family Health, 225 Park Avenue South, Suite 1700, New York, NY 10003. (Payment must accompany all orders.)

9. **A Doctor's Advice on Self-Care**

   (Today's nonprescription drugs not only relieve symptoms but also, in some cases, cure or prevent diseases. The U.S. Commissioner of Food and Drugs tells how to use them safely and effectively.)

   Available free, single or in quantity. Nonprescription Drug Manufacturers Association, Public Affairs, 1150 Connecticut Ave. N.W., #1200, Washington, DC 20036.

10. **Preventing Accidental Poisonings (59990-0000)**

    (An 8-page, $8^{1}/_{2}$" × $3^{3}/_{4}$" booklet discussing potentially harmful products in the home, tips on how to prevent poisoning as well as what to do in the event of an accidental poisoning. Includes a tear-off quick response chart to keep near the phone.)

Prices, each: 10–99, $.91; 100–499, $.87; 500–999, $.83; 1,000–$.79. National Safety Council, 444 North Michigan Avenue, Chicago, IL 60611. (Payment must accompany all orders under $25—add $3 shipping and handling.)

11. **Babysitter's Checklist**
    (Lists first aid information about injuries and accidents resulting in poisonings, burns or bleeding. The laminated reusable wall chart (11″ × 14″) also has space to list emergency phone numbers and special instructions regarding a child's health.)

    Single copies of the Checklist are available for $1 to cover mailing costs from the Council on Family Health, 225 Park Avenue South, 17th Floor, New York, NY 10003. For larger quantities, write to the Council on Family Health.

12. **Emergency First Aid for Children**
    (A 4″ × 9¼″ multi-fold booklet on first-aid instructions for childhood accidents and poisoning emergencies.)

    Available through the courtesy of Plough, Inc. Quantities up to 200 free from the Secretary, Poison Prevention Week Council, P.O. Box 1543, Washington, D.C. 20013. For larger quantities, write to: St. Joseph Children's Products, Dept. JB89, Plough, Inc., P.O. Box 377, Memphis, TN 38151.

13. **First Aid Skill Book**
    (Colorful 31-page booklet. Shows and discusses basic first aid techniques. Aimed at all boys, ages 10–16.)

    Catalogue No. 6588, 60¢ ea. Accompanied by a Teacher's Guide, Catalogue No. 18-323, 60¢ ea. Available through Boy Scouts of America, Sales Dept., Supply Division, 1325 Walnut Hill Lane, Irving, TX 75015-2079.

14. **First Aid for Poisoning**
    (An 8½″ × 11″ two-color Flyer/Poster, ARC Stock No. 320800.)

    Limited quantities available through local Red Cross Chapters. Larger quantities in packages of 100 also are available free.

15. **Health Emergency Chart**
    (Wall chart with first aid measures, plus tips for safe storage and use of medicines in the home.)

    One copy free; larger quantities 40 cents each. Council on Family Health, 225 Park Avenue South, Suite 1700, New York, NY 10003. (Payment must accompany all orders.)

16. **First Aid Training (ARC 2150)**
    (A flyer describing Red Cross First Aid courses of instruction.)

    Free at local Red Cross Chapters. *The Red Cross Course Catalogue* (ARC 2162) also presents information on courses.

17. **First Aid Guide (OP-015/7)**
    (A guide for first aid in the home. 67 pages, 4″ × 7″.)

    Packages of 10 copies: 1–4, $8.50; 5–9, $8.50; 10–24, $8.50; 25–49, $7.65; 50–74, $7.20. American Medical Association, Order Dept., P.O. Box 10946, Chicago, IL 60610. (Payment must accompany all orders.)

18. **Solid and Liquid Poisons in the Home (429.04-21)**
    (A 4-page safety bulletin containing practical information on poisons in and around the home, pointing out special dangers to children.)

    Prices, each 10–99, $.46; 100–999, $.43. National Safety Council, 444 North Michigan Avenue, Chicago, IL 60611. (Payment must accompany all orders under $25—add $3 shipping and handling.)

19. **Tips Against Tampering**
    (Suggestions to consumers about how to help protect themselves against criminal tampering with OTC medicines.)

    Available free, single or in quantity. Nonprescripton Drug Manufacturers Association, Public Affairs, 1150 Connecticut Ave., N.W., #1200, Washington, DC 20036.

20. **The Poison Safety Game**
    (A game for older elementary school children to help them protect their younger siblings from poisonings.)

    Available free in single copies or bulk quantities up to 200 copies. Food and Drug Administration, HFE-88, 5600 Fishers Lane, Rockville, MD 20857.

21. **What About Plants?**
    (Lists many common house plants and their potential toxicity, along with first aid recommendations.)

    Please contact your regional Poison Control Center for a copy of this pamphlet developed by the American Association of Poison Control Centers.

22. **Plants That Poison**
    (An illustrated chart of common poisonous plants indicating size, toxic parts and symptoms of poisoning. Contains information on preventing plant poisoning and emergency measures.)

    Single copy and quantity price list free. **Must** send self addressed, stamped business envelope to: The Kalamazoo Poison Prevention Council, P.O. Box 2261, Kalamazoo, MI 49003.

23. **"Poisonous Plants Guide"**
    (A full-color one-page guide listing plants according to their toxins and physiological

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symptoms. It also lists 27 nontoxic plants and provides safety tips.)

First copy $1.00. Bulk quantities available at discount. Plant Safety Guide, 6817 Weedin Place, N.E., Box 1, Seattle, WA 98115.

24. Safe Use of Aerosols Around the House
(Instructs the reader on proper use and storage of these products. Shows how an aerosol product works and helps families understand directions and cautions on the label.)

Single copy free with self-addressed stamped envelope, 25 cents each additional copy. Chemical Specialties Manufacturers Association, Suite 1120, 1001 Connecticut Avenue, N.W., Washington, DC 20036.

25. "Is Your Home ..... POISON SAFE?!"
(An 8½" × 11" three fold brochure with an animated teddy bear explaining why, what and when poisonings occur. Provides safety tips to prevent poisonings. Available in English and Spanish.)

Sample copy of English and Spanish is available. Order form will be included upon request with price list. San Bernardino County Department of Public Health Child and Adolescent Health Program, 351 N. Mt. View, Room 305, San Bernardino, CA 92415–0010.

26. "Stop Lead Poisoning" Brochure.
(Featuring Big Bird character, this brochure serves as a parental guide to causes, prevention and remedies of lead posioning. Includes sticker which allows you to post doctor's phone number for quick reference. 6-panel, 8½" × 3½", 4-color.)

Product Number 49002–0000 (English)
Product Number 49003–0000 (Spanish)

Prices, 1–99, $.76; 100–499, $.72; 500–999, $.68; 1000+, $.64. National Safety Council, 444 North Michigan Avenue, Chicago, IL 60611. (Payment must accompany all orders under $25—add $3 shipping and handling.)

27. "Dear Mom and Dad"—Lead Paint Poisoning Prevention.
(Pamphlet for distribution to residents of areas with old lead paint poisoning hazards. Spanish edition also available.)

Quantity prices; 1–99 copies at 12¢ each; 100–999 at 10¢ each. National Paint and Coatings Association, 1500 Rhode Island Avenue, N.W., Washington, DC 20005.

28. Emergency Action for Poisoning
(3½" × 8½" card outlining the first aid steps to take in the event of a poisoning. Produced in conjunction with the American College of Emergency Physicians.)

One copy available by sending a self-addressed stamped envelope to: Secretary-Treasurer, American Association of Poison Control Centers, 2025 I St., N.W., Suite 105, Washington, DC 20006.

29. There Are Good Reasons For Buying Certified Art Materials
(An 8½" × 11", 3-fold flyer-poster relating to the use of non-toxic and properly-labeled children's and adults' art materials.)

Single copies free; quantities upon request. Art and Craft Materials Institute, 715 Boyleston Street, Boston, Massachusetts 02116.

30. Injury Prevention Program Safety Slips
(There are 8 age-related sheets with safety information on poisons, burns, falls, and other hazards.)

$32 for 100 copies of each set plus $3.50 handling charge. American Academy of Pediatrics, Publication Department, PO Box 927, Elk Grove Village, IL 60009. Prepaid orders only.

31. Injury Prevention Program Safety Surveys
(There are 5 questionnaires, in checklist format concerning poisons, burns, falls, and other hazards.)

$20 for 100 copies of each set plus $3.50 handling charge. American Academy of Pediatrics, Publication Department, PO Box 927, Elk Grove Village, IL 60009. Prepaid orders only.

32. First Aid for Poisoning Chart
(An 11" × 17" chart with first aid instructions for poisoning and for several other types of injury.)

Single copies $2.50. $50 for 100 copies plus $3.50 handling charge. American Academy of Pediatrics, Publication Department, PO Box 927, Elk Grove Village, IL 60009. Prepaid orders only.

33. Fighting Back: Helping Young People Kick the Sniffing Habit
(12-page illustrated booklet. Discusses the nature of inhalation abuse, identifies substances typically misused by adolescents, and gives practical guidelines for adults on how to deal with the problem before seeking outside help.)

Single copies free with self-addressed stamped envelope. For bulk quantities, request in writing for bulk price information. Write to: Aerosol Education Bureau, Suite 1120, 1001

Connecticut Avenue, N.W.,
Washington, DC 20036.

34. **En Pie de Lucha: Ayudando a Los Jovenas a Combatir el Habito de Aspirar Substancias Nocivas**

Spanish version of "Fighting Back: Helping Young People Kick the Sniffing Habit" (see separate listing under "Fighting Back" for order information).

35. **Child Safety Slips**

Each of the ten Child Safety Slips provides guidelines for the prevention of injury hazards. These handouts for parents highlight some of the frequent causes of childhood accidents.

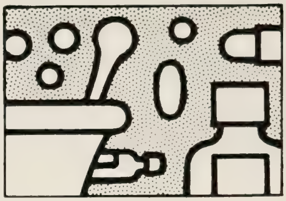
Topics are:
Baby Sitting Reminders
Protect Your Child . . . Prevent Poisoning
Choosing the Right Size Bicycle for Your Child
Safe Bicycling Starts Early
The Child as Passenger on an Adult's Bicycle
Infant Furniture: Cribs
Protect Your Home Against Fire: Planning Saves Lives
Safe Driving: A Parental Responsibility
Safe Swimming for Your Young Child
Safety Tips for Home Playground Equipment

Each Topic is available in sets of 100 for $6.00 plus $3.50 handling charge. Or order all 10 sets for $50.00.

American Academy of Pediatrics
P.O. Box 927
Elk Grove Village, IL 60009
Prepaid orders only.

Editor's Note: Readers are encouraged to save this information for purchasing educational aids throughout the year.

Things You Should Know FOR YOUR GOOD HEALTH



Preventing Childhood Poisonings

During the month of March will be National Poison Prevention Week. This was started in 1961 to raise public awareness of the dangers of accidental poisonings and to take preventative measures to avoid them. Some good housekeeping rules to use to prevent poisoning accidents would include: keep all household chemical products and medicines out of the sight and reach of children; leave items in their original containers with their original labels; avoid taking medications in front of children; clean out medicine cabinets periodically; safely dispose of unneeded medications and use safety packaging properly by closing the container securely after use.

If your child is accidentally poisoned or eats or drinks a substance which might be poisonous, information for treatment may be obtained from a Poison Control Center (PCC). There are presently 116 PCCs in the U.S. that maintain information for health care personnel or the public on necessary treatment for the ingestion of household products and medicines. PCCs are experts on the toxicity of household products, plants, and medicines. You can find the phone number of the PCC located nearest to you on the inside cover of the yellow or white pages of the telephone directory. Keep this and other emergency numbers listed near the phone in case of emergency.

If you suspect that your child has ingested a substance which may be poisonous, you should remain calm. Not all household products are poisonous and not all exposures necessarily result in poisoning. Read the label on the product for advice concerning immediate first-aid actions to perform, then call the PCC, your physician, or your local emergency number immediately. Be prepared to give the following information to the person contacted:

- child's age;
- child's weight;
- poison involved—have label ready to read contents to expert;
- route of exposure—swallowed, splashed, inhaled, absorbed;
- how long since time of exposure;
- any first-aid that may have been given;
- if the person vomited, is unconscious, or very drowsy; and
- your location, and how long to the nearest hospital.

Always keep on hand at home a one-ounce bottle of syrup of ipecac for each child or grandchild in the house. Syrup of ipecac is used in the emergency treatment of certain kinds of poisonings. It is taken by mouth to cause vomiting of the poison. It is available in one-ounce bottles without a prescription; however, it is only to be used after consultation with and direction of a physician, PCC, or emergency center. Its use is not recommended for children under one year of age.

Directions for the use of ipecac for children aged 1–3 are to take 15ml orally (one-half of the one-ounce bottle) preceded or followed by a 4–8oz. glass of water. The water helps the medicine to cause vomiting. Do not use milk or carbonated beverages, as they may prevent ipecac from working properly. For children greater than 3 years old and adults, the dosage is 15-30ml followed by an 8oz glass of water.

If vomiting does not occur within 20 minutes, a second dose may be taken. If vomiting does not occur after a second dose, immediately go to an emergency room. **DO NOT** take more than two doses. It is very important that syrup of ipecac is used only as directed. Do not take more of it or more often than recommended on the label, unless otherwise directed. Serious side effects may result from overusage.

Since the institution of a national poison prevention week in 1961 and child-resistant packaging in 1972, there has been a sharp decline in the number of fatalities due to accidental poisonings. By being aware of accidental poisonings and taking special precautions in the home to prevent such an occurrence, the number of fatalities will continue to decline and it is hoped eliminated. ITS FOR EVERYONE'S GOOD HEALTH.

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Controversy on Dietary Fiber May Overlook Size of Dosage

The pivotal question of proper dosage may be virtually ignored in the current controversy over health claims for dietary fiber being made by various foods and supplements, according to doctors in a medical briefing during the annual meeting of the American College of Gastroenterology.

The roundtable included presentations by Dr. Gerald Friedman, associate clinical professor of medicine, the Mount Sinai School of Medicine; Dr. Marvin M. Schuster, professor of medicine, Johns Hopkins University School of Medicine; and Dr. Martin H. Floch, clinical professor of medicine, Yale University School of Medicine.

One of the fundamental considerations in developing and administering any medical therapy is proper dosage, and some doctors believe this factor has largely been ignored in recent promotion of dietary fiber in consumer food products and supplements. While adequate fiber in the daily diet is highly recommended to maintain good health, physicians point out that even healthy individuals should be aware of how much fiber is needed and how much they are actually consuming.

A concern among medical professionals is that consumers, acting in response to strong promotional efforts for products ranging from cereals and breads to cooking oils, may be misled as to the amount of fiber they are consuming. While foods such as bran muffins certainly add dietary fiber, the type and amount may not be enough to insure adequate fiber in the diet.

Moreover, individuals who may have serious medical conditions are urged to see their physicians to insure proper diagnosis and treatment. Increasingly, doctors have recommended dietary fiber for such conditions as irritable bowel syndrome, diverticular disease, diarrhea, constipation and hemorrhoids. Recent research also suggests that dietary fiber may have beneficial results for diabetes, colon cancer and high cholesterol.

In both healthy and sick individuals, doctors note that a number of factors must be considered in determining what type and how much fiber should be added to the diet. Factors to be evaluated in determining the amount of fiber include the age of the individual and other concurrently prescribed medications.

Dietary fiber may be either soluble or insoluble, and each functions differently in various physical conditions. Insoluble fiber adds bulk primarily in the large intestine. Soluble fiber absorbs much more water and adds bulk throughout the digestive system.

While many processed foods contain a high level of dietary fiber, some include other ingredients that may not be beneficial, such as saturated fats. Also, most food labels do not indicate the total amount of fiber included in the product nor do they break down the appropriate amounts of soluble and insoluble fiber.

For treatment of medical conditions, many doctors prefer to use dietary supplements so as to control the type of fiber and the amount that is added to a patient's diet. Adding insoluble fiber is easily accomplished because so many rich sources are readily available. The most familiar food with insoluble fiber, wheat bran, is convenient because the dosage can easily be controlled.

Increasing soluble fiber is more complicated because there are fewer rich sources. Psyllium, a wheat-like herb especially rich in soluble fiber, has been widely studied in clinical trials and is frequently used by consumers as a supplement.

Consumption of dietary fiber by American adults may be as low as 10 grams a day per person, according to estimates by the American Dietetic Association (ADA). For healthy adults, the ADA recommends a high-complex carbohydrate, low-fat diet containing 20 to 35 grams of dietary fiber a day. This is consistent with recommendations from the National Cancer Institute and other governmental health organizations.

While medical professionals generally agree that Americans should make sure they consume adequate dietary fiber to maintain good health, many stress the importance of knowing the appropriate amount needed for significant results. Individuals who are in doubt about their fiber needs are advised to consult a doctor or their pharmacist.

Fiber-rich Foods

While most foods contain both soluble and insoluble fiber, the insoluble fiber content is generally higher. Listed below are particularly good sources for either soluble or insoluble fiber.

Soluble

Apple, raw with skin
Beets
Broccoli
Brussel sprouts
Carrots
Chick peas
Corn
Eggplant
Kale
Kidney beans
Oat bran
Oatmeal
Okra
Peas, blackeye
Pinto beans
Potatoes, sweet
Strawberries
Turnips, greens and root
Zucchini

Insoluble

Acorn squash
Asparagus
Beans, green
Beans, lima
Beans, white
Blackberries
Bread, pumpernickel
Bread, whole meal
Cauliflower
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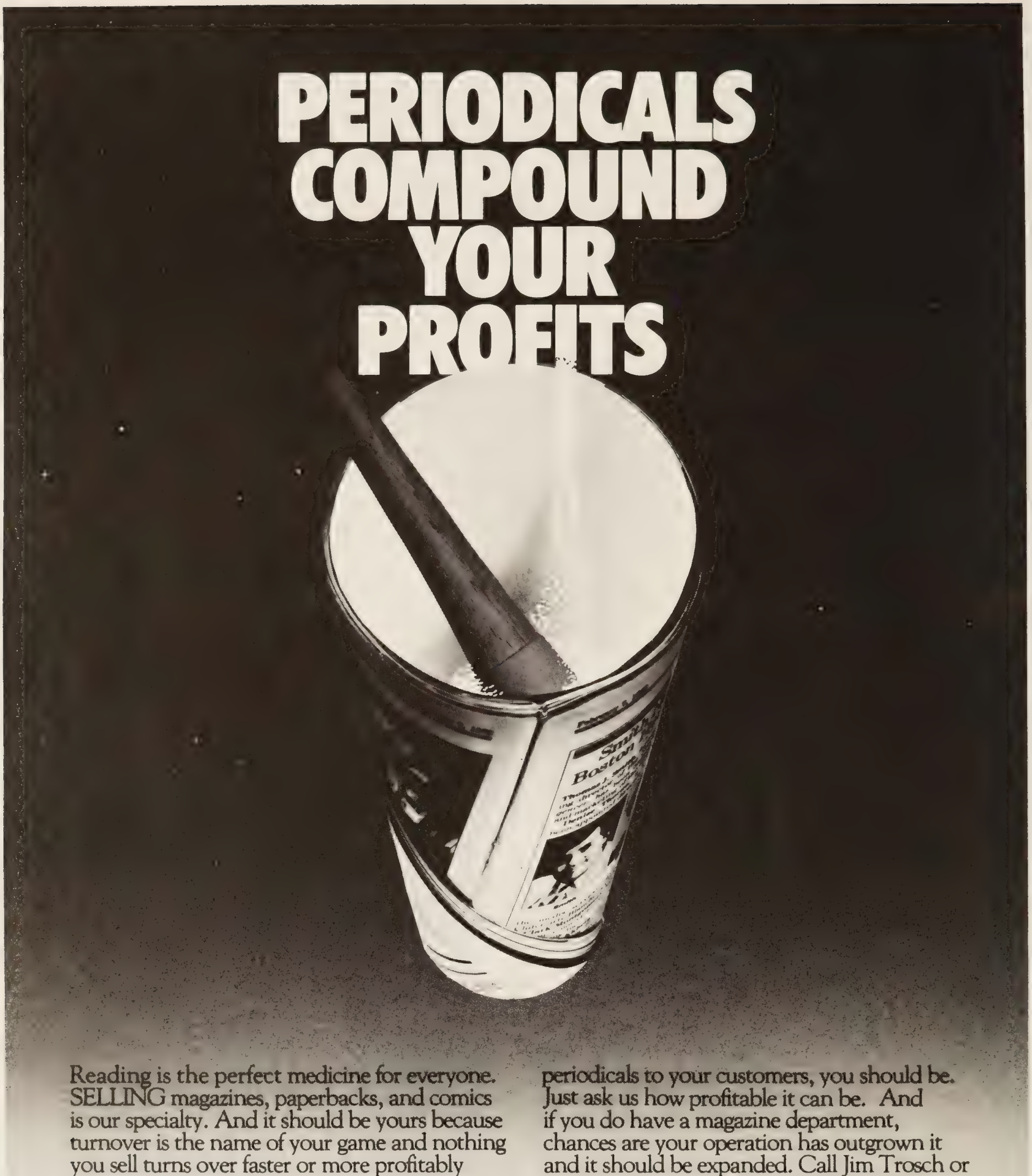
Raspberries
Rice, brown
Wheat bran



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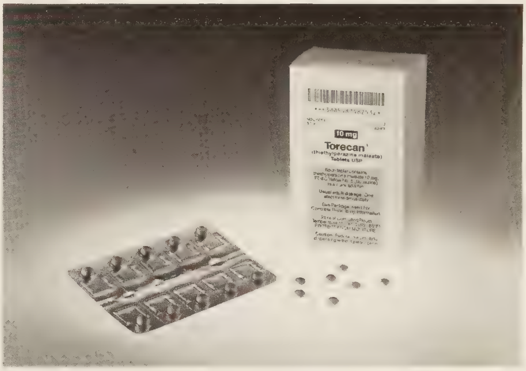
Roxanol (morphine sulfate) suppositories are now added to Roxane Laboratories' line of products. Available in 5 mg, 10 mg, 20 mg, and 30 mg strengths, the suppositories are available in boxes of 12 individually foil wrapped.

New Biotel tests, recently introduced in pharmacies nationwide, are now available OTC for home screening of diabetes, kidney disease, and urinary tract infections. Designed for optimal sensitivity, ease of use, and low cost, the innovative tests promote early detection and diagnosis of potentially serious disease.

Developed by ICI Pharma, Zoladex (goserelin acetate implant) is a potent synthetic analogue of lutenizing hormone releasing hormone. Used in the palliative treatment of advanced prostate cancer, the sterile monthly subcutaneous injection is designed to provide continuous release over a 28-day period.



Hospitals and other institutional dispensers can now purchase Torecan 10 mg in unit dose blister packages in boxes of 100. Roxane's introduction of the new packaging makes Torecan the first and only unit dose thiethylperazine maleate tablets.

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Continuing Education

Continuing Education Quiz

The Maryland Pharmacist **MARCH, 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by June 30, 1990. A continuing education certificate for one contact credit) will be mailed to you within 30 days. Please type or print clearly.

Name ____________________

Social Security Number ____________________

Address ____________________

City/State/Zip ____________________

Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? __________ minutes

Cholesterol: Part I

1. The major portion of cholesterol found in the body is:
    a. obtained from dietary sources.
    b. synthesized by the body.

2. The lipoprotein that transports cholesterol to the liver for conversion into bile acids is:
    a. chylomicrons.
    b. HDL.
    c. LDL.
    d. VLDL.

3. The type of fiber that is more effective for reducing blood cholesterol levels is:
    a. insoluble fiber.
    b. soluble fiber.

4. Cholesterol is essential for proper synthesis of:
    a. vitamin A.
    b. vitamin C.
    c. vitamin D.
    d. vitamin E.

5. The study which demonstrated unequivocally that reducing cholesterol levels decreases the incidence of cardiovascular heart disease was the:
    a. Framingham study.
    b. Helsinki study.
    c. LRC-CPPT study.
    d. MRFIT study.

6. The drug used in the study referred to in question #5 was:
    a. cholestyramine.
    b. clofibrate.
    c. lovastatin.
    d. probucol.

7. The lipoprotein that is responsible for transporting cholesterol from the liver to the tissues is:
    a. chylomicrons.
    b. HDL.
    c. LDL.
    d. VLDL.

8. The major portion of cholesterol in the body is located within the:
    a. blood.
    b. cells.

9. The lipoprotein responsible for transporting dietary triglycerides during intestinal absorption is:
    a. chylomicrons.
    b. HDL.
    c. LDL.
    d. VLDL.

10. In public screening programs, patients should be referred to a physician when their total blood cholesterol concentration is at what minimum level or above?
    a. 100 mg/dL
    b. 150 mg/dL
    c. 200 mg/dL
    d. 250 mg/dL

Classified

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THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Santi V. Lusco at 254-1772.

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FDA HOTLINE FOR AIDS information is 800-432-AIDS.

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PHARMACY FOR SALE. A 35-year old established pharmacy available due to illness of owner. Located in historic district of Eastern Shore city, Purchase price: $ for $ inventory, plus profit. Long lease available. Write or contact MPhA for more information.

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The Maryland Pharmacist

VOL. 66 APRIL, 1990 No. 4

MPhA's 1990 Directory of Third-Party Programs

THE MARYLAND PHARMACIST

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References
1. *USP DI Update, September/October 1988, p 120.*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70*
5. *Am J Gastroenterol 1989;84:769-774.*

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Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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Correspondence Course

Advising Consumers on Managing Cholesterol Part II: Drug Therapy

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Goals

The goals of this lesson are to:

1. identify major drugs for treating hypercholesterolemia;
2. state the advantages and disadvantages of each treatment modality; and
3. explain from a list, important patient information to convey to persons being treated for hypercholesterolemia.

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Objectives

At the conclusion of this lesson, successful participants should be able to:

1. identify treatments of choice when criteria associated with cholesterol abnormalities are specified;
2. choose the limits of therapy for each treatment type, listing advantages and disadvantages, precautions and warnings, adverse effects, and drug interactions; and
3. select appropriate information to counsel patients who are being treated for hypercholesterolemia.

This is the second lesson in a two-part series on cholesterol and hypercholesterolemia. Part I discussed the physiologic and pathologic roles of cholesterol. It defined lipoproteins and described their functions, and stated the current recommendations for initiation of treatment of hypercholesterolemia. It also discussed dietary management of hypercholesterolemia, and emphasized that diet is the cornerstone of therapy for hypercholesterolemic states.

Hypercholesterolemia - A Review

There is a direct link between blood cholesterol concentration and the incidence of coronary heart disease (CHD). As can be seen in Table 1, a total blood cholesterol level less than 200 mg/dL is desirable. Concentrations of 200 to 239 mg/dL are borderline, while levels above 240 mg/dL indicate high risk for CHD.

LDL cholesterol (i.e., low density lipoprotein; "bad cholesterol") levels under 130 mg/dL are desirable; borderline concentrations include values of 130 to 159 mg/dL. Levels of 160 mg/dL and above are considered to be high risk for CHD.

The role of HDL cholesterol (i.e., high density lipoprotein; "good cholesterol") has not yet been fully defined. One school of thought stresses that high levels of HDL are beneficial, while others state that the evidence is inconclusive.

Specific Drug Therapy for Intervention of Hypercholesterolemia

Many persons with hypercholesterolemia can be effectively managed with

Table 1

Relationship between blood cholesterol and risk for coronary heart disease (CHD)

Blood Level	*Classification*
I. Initial classification for risk based on total cholesterol:	
<200 mg/dL	Desirable blood cholesterol
200-239 mg/dL	Borderline; high risk for CHD
≥240 mg/dL	High blood cholesterol; high risk for CHD
II. Classification based on LDL cholesterol:	
<130 mg/dL	Desirable LDL cholesterol
130-159 mg/dL	Borderline; high risk for CHD
≥160 mg/dL	High LDL cholesterol; high risk for CHD

dietary modification. If diet fails to reduce elevated levels, especially in persons at high risk for CHD, pharmacologic intervention may be necessary. Or if the patient is unwilling or unable to follow dietary guidelines, drug therapy may be initiated. Regardless, the decision to use drugs must be individualized.

There is a large number of drugs that effectively lower elevated blood cholesterol levels (Table 2). Selection is dependent upon an individual's ability to tolerate a particular drug and comply with its dosage regimen, and upon the drug's therapeutic response. Whenever possible, patients should receive a single drug. If additional drugs must be added, those which work by a different mechanism of action should be chosen. And even after drug therapy has been instituted, dietary management should be continued.

Table 2

Antilipidemic drugs

Drug	*Tradename (Mfr)*	*Effect*		
		Total Cholesterol	*LDL*	*HDL*
Cholestyramine	Questran (Bristol-Myers) Cholybar (Parke-Davis)	Decr	Decr	Unch/Incr
Colestipol	Colestid (Upjohn)	Decr	Decr	Unch/Incr
Probucol	Lorelco (Merrell Dow)	Decr	Decr	Decr
Niacin	Various	Decr	Decr	Incr
Lovastatin	Mevacor (MSD)	Decr	Decr	Incr
Clofibrate	Atromid S (Ayerst)	Decr	Unch/Decr	Unch/Incr
Gemfibrozil	Lopid (Parke-Davis)	Decr	Unch/Decr	Incr
Dextrothyroxine	Choloxin (Flint)	Decr	Decr	Unch

Decr-Decreased; *Incr*-Increased; *Unch*-Unchanged

Bile Acid Sequestrant Resins

Cholestyramine (Questran, Cholybar) and colestipol (Colestid) are hydrophilic compounds that are not soluble in water. They are anion exchange resins that bind tightly with bile acids in the small intestine. Since the resulting complex is insoluble, bile acids cannot be reabsorbed via the enterohepatic circulation into the blood. Bile acids normally inhibit the rate limiting step in conversion of cholesterol to bile acids in the liver. Reduced reabsorption of bile acids, then stimulates increased hepatic oxidation of cholesterol to more bile acid production. This in turn lowers circulating LDL and total blood cholesterol levels. The bile acid sequestrant resins (BASRs) can lower LDL cholesterol by 15 to 35 percent. Reduction of LDL concentration may be apparent in one week, and reach maximum in two weeks.

A major problem with BASRs is that they require ingestion of high doses for maximum efficacy. They are unpleasant to take, and cause minor, but frequent, adverse reactions on the GI tract. Prominent side effects include nausea, heartburn, flatulence, constipation, bloating and fullness, and abdominal pain. In fact, in the seven-year Lipid Research Clinics Coronary Primary Prevention Trial (LRC-CPPT) discussed in Part I of this lesson series, only 14 percent of individuals in the drug treatment (cholestyramine) group actually finished the study taking fully prescribed doses, because of discomforting adverse effects.

One of the most frequently reported adverse effects, especially in older patients, is constipation. Constipation can be severe, and accompanied by impaction. Patients can help reduce the onset and severity of constipation by taking their medication with adequate fiber and as much fluid as possible. Mixing the products in applesauce, or increasing consumption of high-fiber fruits and vegetables in the diet should lessen constipation. Bulk-forming laxatives (e.g., Citrucel, Metamucil) can be used concurrently with BASR therapy.

To improve taste, the products may be mixed in milk, fruit juice, or carbonated beverages. They can also be mixed with milk in hot breakfast cereals. Powders should not be taken in dry form. Mixing the next days' doses the evening before and refrigerating the mixture may enhance taste. The mixture must be stirred or shaken thoroughly before taking.

Patients should start with the lowest dose possible, and gradually increase it to the effective dose. Twice a day administration is adequate for most people. The evening dose is the most important; taking it within an hour of the major meal increases drug efficacy. In fact, this may permit reducing the dose of medication while still assuring a suitable drug response.

BASRs can interact with fat soluble vitamins and a number of other drugs including thiazides, thyroid derivatives, iron, tetracyclines, digitalis glycosides, and warfarin to decrease their absorption. Patients should be advised to separate doses of these drugs by at least one hour before the dose of resin, or four to six hours after the dose of resin.

A recent development is approval of a confectionary bar of cholestyramine named Cholybar. The product is caramel or raspberry flavored, and is bit off and chewed like a candy bar. It is hoped that this new dosage form will improve compliance with cholestyramine.

Another new product is called Questran Light. Its manufacturer has replaced the sugar with NutraSweet™, and removed some of the inert fillers. The resultant product is less bulky, non-caloric, and is reported to have an improved taste.

Niacin

Niacin (nicotinic acid) given in daily doses up to 6 gm is an effective first-line treatment for lowering LDL- and total cholesterol, and triglycerides. Some studies confirm reductions in LDL cholesterol and total cholesterol concentrations of about 25 percent and 35 percent respectively. Niacin also increases HDL cholesterol concentration, perhaps by 10 percent. Niacinamide does not lower cholesterol or triglyceride levels, so antihypercholesterolemic action is not related to vitamin effect. Niacin's relatively low cost adds to its positioning as a drug of choice.

Its mechanism of action is believed to be by decreasing free fatty acid mobilization from adipose tissue. With fewer free fatty acids entering the liver, less triglyceride and very low density lipoprotein (VLDL) are synthesized. With less VLDL formed, there is correspondingly less conversion to LDL, so LDL levels are lowered. Niacin also inhibits hepatic cholesterol biosynthesis, and enhances catabolism of LDL. Niacin's mechanism of action to increase HDL cholesterol level remains unknown.

Adverse effects associated with large doses are the major reason for therapeutic failure. Patients frequently skip doses or discontinue therapy because of the side effects. Adverse reactions include flushing, especially of the face and neck, dizziness, throbbing headache and other symptoms associated with vasodilatation. They generally appear within 15 to 20 minutes after a dose and persist for 10 to 30 minutes. After a period of acclimation following initiation of therapy, an individual may become partially tolerant to these effects. But some studies also report that the effects may later be precipitated if the individual ingests hot liquids or alcoholic beverages. Other effects include nausea, vomiting, diarrhea, abdominal pain, itching, and hyperglycemia.

The vascular effects from niacin result from release of prostaglandins. Consequently, their severity may be lessened by taking one aspirin tablet (325 mg) approximately 30 to 60 minutes before each dose of niacin, or one aspirin tablet twice a day, regardless of the time at which the niacin is administered. Pharmacists can recommend adjunctive therapy with aspirin if they are certain that patients will not react adversely to it (e.g., the patient does not have an active peptic ulcer). If there is any doubt about the patient's overall condition, a physician should first be consulted.

Using timed-release dosage forms of niacin and taking conventional doses during or within 30 minutes of a meal may also help modify the severity of adverse effects.

Probucol

Probucol (Lorelco) is a lipophilic drug that reduces both LDL cholesterol and total cholesterol concentrations. The former may be reduced by 10 to 15 percent, and the latter by 20 to 25 percent. Probucol is well tolerated. It is a drug of choice based on long-term studies which have demonstrated effectiveness, and its high safety factor. It is indicated for individuals who do not respond to diet and/or weight reduction.

Its precise mechanism of action is unknown. Probucol stimulates LDL cholesterol clearance by a nonreceptor mechanism. There is evidence that it also inhibits cholesterol synthesis. Probucol decreases HDL cholesterol levels slightly. The clinical significance of this is not known.

It may take 3 to 4 months to achieve significantly reduced cholesterol levels. This latent period is generally satisfactory, assuming the individual is not acutely ill from his hypercholesterolemic condition and therefore requires immediate reduction of blood cholesterol levels.

Probucol is also interesting from a speculation standpoint. Animal studies clearly demonstrate that it can reverse the amount of cholesterol plaque. In these studies, atherosclerotic lesions were either prevented or significantly reduced with probucol therapy. Large aortic plaques continued to develop in untreated, control animals. Interestingly, blood cholesterol levels in treated animals throughout the study were approximately the same as in controls. This demonstrated that pharmacologic benefit was mediated through a mechanism other than solely lowering cholesterol levels.

Probucol may slow the atherosclerotic lesion process by an antioxidant action to inhibit oxidative modification of LDL cholesterol. LDL must be oxidized in order to be taken up by cellular receptors that initiate the fatty streaking of atherosclerotic lesions. Clinical studies are currently underway to assess the significance of this potential beneficial reaction.

Adverse effects are rare, and generally mild. They include nausea, abdominal cramping, diarrhea, and palpitations.

Lovastatin

Lovastatin (Mevacor) was introduced to the American market in late 1987. Formerly called mevinolin, lovastatin's mechanism of action is unlike any other drug previously available. It inhibits the enzyme HMG-CoA reductase, which catalyzes cholesterol biosynthesis. Consequently, cholesterol formation is decreased, and blood levels reduced. Reductions of LDL cholesterol of 19 to 39 percent have been reported.

There are three notable precautions associated with lovastatin therapy. First, patients should be evaluated for corneal opacities before beginning therapy, and monitored at least once a year throughout the duration of drug administration.

Second, a small number of patients (<2 percent) experienced an increase in serum transaminase levels during clinical trials. Enzyme levels increased three times above normal, but decreased quickly once therapy was discontinued. Biopsy studies failed to disclose any indication of permanent hepatic pathology.

Third, approximately 1 percent of patients during clinical trials experienced symptoms of myalgia (muscle pain). The clinical significance of this response is unknown at this time, but patients should be assessed for it.

Therapy for hypercholesterolemia may require life-long treatment. Chronic studies are therefore needed to assess the overall safety of lovastatin. There is some question concerning the wisdom of suppressing cholesterol synthesis over a long period of time, because of cholesterol's integral role in so many physiologic processes.

Preliminary studies show that adverse effects are relatively rare, and drug interactions have not yet been reported. The most common adverse effects are on the GI tract, with nausea, constipation and/or diarrhea, flatus, and abdominal cramping appearing in nearly 5 percent of patients.

Lovastatin is preferentially administered in single daily doses. It is best to take it with the evening meal, because synthesis of cholesterol proceeds at its greatest rate between midnight and 3:00 a.m. In the event that adverse symptoms appear to single doses, it may be divided into two smaller doses. One dose should be taken with the evening meal, and the other after lunch. Therapeutic effectiveness is reported to be lessened if the drug is taken in the morning.

Fibrates

Two fibric acid derivatives are currently marketed: clofibrate (Atromid S) and gemfibrozil (Lopid). Although both are officially indicated for reducing elevated triglycerides, blood cholesterol concentration may also be reduced.

Their mechanism of action is not entirely clear. They interfere with synthesis or secretion of VLDL, inhibit cholesterol synthesis, and enhance its secretion in bile. They also inhibit acetyl CoA carboxylase, the enzyme for synthesis of fatty acids. In turn, triglyceride synthesis is impaired.

Gemfibrozil was the drug used in the Helsinki Study discussed in Part I of this lesson series. In that investigation, mortality from CHD was 24 percent lower in the treatment group.

Both gemfibrozil and clofibrate may potentiate the anticoagulant actions of warfarin (Coumadin). Both drugs increase biliary cholesterol saturation and, therefore, may lead to increased formation of cholesterol gallstones. Their most common adverse effects are nausea, diarrhea, and abdominal discomfort.

Second-Line Drugs

When diet and/or exercise fail to control cholesterol concentration and the aforementioned drugs offer little benefit, one or both second-line therapies may be chosen. These include dextrothyroxine sodium (Choloxin) and neomycin. Neither can be recommended for primary therapy based on their relative lack of efficacy, and high incidence of adverse effects.

When reducing blood cholesterol levels, it is not the specific drug or method used that is important, but the final outcome of therapy. If an individual can be adequately controlled on diet or exercise, this is preferred. If drugs are chosen, the agent that achieves a reduction in cholesterol concentration while imparting minimum side effects is desired. Many drugs reduce cholesterol to the same magnitude.

The major reason for lowering blood cholesterol levels is to reduce the risk for CHD. Patients whose blood levels are higher than normal secondary to another pathology or drug must be treated for the primary disorder first. Such conditions include hypothyroidism, diabetes mellitus, biliary cirrhosis, nephrotic syndrome, and multiple myeloma.

Assisting Patients With Hypercholesterolemia

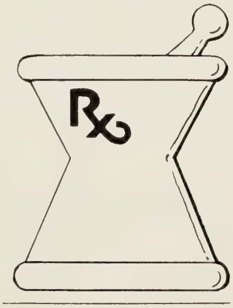
Patients should understand the relationship between their disease and therapy. They should understand the importance of closely adhering to their physician's instructions, including diet and/or exercise programs.

Consumers should also know that food products labeled "no cholesterol" may still not be acceptable for a cholesterol-lowering diet. The product may contain large amounts of saturated fats. Vegetable oils used to make the product may contain no cholesterol in their original form, but through the process of hydrogenation, they are converted into saturated fats.

Conclusion

Diet is the cornerstone of therapy of hypercholesterolemia. It must be adhered to throughout drug treatment. The major cause of elevated blood cholesterol levels in most individuals is consuming excess cholesterol in food. Some patients have genetically-determined hypercholesterolemia, but they are in the minority.

When diet alone and/or exercise fail to control elevated cholesterol concentrations, drug therapy is warranted. The wide variety of drugs available enable physicians to tailor therapy to patients' specific needs.



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Chesapeake Health Plan
PHS
PO Box 80716
Los Angeles, California 90080
(800) 421-2342
(301) 285-8000

CIGNA
% Health Services Plus
5080 Sinclair Lane
Suite 305
Columbus, Ohio 43229
(800) 888-9997

Express Scripts (PERx)
2369 School Road
St. Louis, Missouri 63146
(800) 451-6145

FreeState
PHS
PO Box 80716
Los Angeles, California 90080
(800) 421-2342 or (301) 683-0100

Group Prescription Services (GPS)
5300 York Road
Baltimore, Maryland 21212
(301) 435-6228

Health Care 2000
D&P Processing
1063 Maiden Choice Lane
Catonsville, Maryland 21229
(301) 247-1244 or (301) 296-8326

Health Elect
% Health Services Plus
5080 Sinclair Lane
Suite 305
Columbus, Ohio 43229
(800) 888-9997

HealthNet FreeState
PHS
PO Box 80716
Los Angeles, California 90080
(800) 421-2342 or (213) 391-1133

HealthNet Sinai Care
D&P Processing
1063 Maiden Choice Lane
Catonsville, Maryland 21229
(301) 247-1244

Hospital Health Plan/Maryland General
D&P Processing
1063 Maiden Choice Lane
Catonsville, Maryland 21229
(301) 247-1244

Iron Workers Local #16
6229 North Charles Street
Baltimore, Maryland 21212

Johns Hopkins Health Plan
1000 East Eager Street
Baltimore, Maryland 21202
(301) 522-9666
Pre-authorization: (301) 522-9927

Kaiser Permanente
4200 Wisconsin Avenue, NW
Suite 300
Washington, DC 20016
(800) 368-5784

For AID and MIP Pharmacies Only
D&P Processing
1063 Maiden Choice Lane
Catonsville, Maryland 21229
(301) 247-1244

Lincoln National Health Plan
Claims Department
7200 Wisconsin Avenue, Suite 801
Bethesda, Maryland 20814
(301) 986-0222

Maryland Medicaid: Operations
Department of Health and Mental Hygiene
PO Box 1935
Baltimore, Maryland 21203

MDI-PA
4 Taft Court
Attn: Pharmacy Claims Department
Rockville, Maryland 20850
(800) 638-8898

Metropolitan/Medimet
Mediment Claims Office
Oneida County Industrial Park
Post Office Box 3018
Utica, NY 13504
(315) 768-2409

NPA
1200 Route 46
Clifton, New Jersey 07013
(800) 576-7813

PAID Prescriptions
Post Office Box 100
Fairlawn, New Jersey 07410-0995
(800) 922-7890

Penn Scripts
℅ General Computer Corporation
2045 Midway Drive
Twinsburg, Ohio 44087
(717) 234-9196

Prescription Drugs, Inc. (PDI)
1111 Cherry Hill Road
Baltimore, Maryland 21225
(301) 354-1466

Prescription Card Services (PCS)
PO Box 52115
Phoenix, Arizona 85072-2115
(602) 391-4717
RECAP Only: (800) 345-5413

Prescription Health Network (Flex Choice)
℅ Health Services Plus
5080 Sinclair Lane
Suite 305
Columbus, Ohio 43229
(800) 888-9997

TriState
210 East Courtland Street
Philadelphia, Pennsylvania 19120
(800) 228-7484

USA Administrators
3540 Wilshire Boulevard
Los Angeles, California 90010
(213) 383-1100

Peters Departs Squibb

After 22 successful years, longtime MPhA friend, supporter, and member Jack Peters has moved to a smaller firm out of Princeton, NJ—Novo-Nordisk Pharmaceuticals, Inc. Jack was Honorary President of BMPA in 1985.

Bristol Meyers is "downsizing" Squibb Pharmaceuticals by 5,000 employees after its recent merger and Jack was adversely affected. Jack will be representing the Diabetes Care Products of Novo-Nordisk throughout the eastern U.S. MPhA looks forward to maintaining the fine relationship with Jack and we all wish him much success with his new firm.

MARYLAND MEDICAL ASSISTANCE

Department of Health & Mental Hygiene Contacts

Medical Assistance Administration

Abuse–(301) 225-1678
Eligibility Verification—(800) 492-2134 (in state)
Fraud–(301) 225-1686
HMO Operations–225-1590
Invoice Processing—(301) 225-5370
Nutritional Formulations—(301) 225-1743
Operations—(301) 225-5349
Pharmacy Staff Specialist—(301) 225-1459
Preauthorization—(301) 225-1755 or (800) 492-6008
Previous Eligibility—(800) 492-5908
Provider enrollment—(301) 225-5339
Provider Relations–(301) 333-5414 or (800) 445-1159
Refill blanks—(301) 396-0128

Division of Drug Control—(301) 764-2890
State Board of Pharmacy—(301) 764-4755

Anorexants

No Anorexant may be dispensed on a Medicaid prescription unless the physician writes in his own hand "Hypokenesis" or "Narcolepsy." All Anorexants are affected by this rule. The following drugs are the most commonly dispensed products:

Biphetamine
Bontril
Desoxyn
Dexamyl
Dexedrine
Didrex
Fastin
Notrol
Obedrin
Obetrol
Phenteramine
Plegine
Pondimin
Presate
Sanorex
Tenuate
Tepanil

Ritalin is not restricted by this rule.

General Notes

Genetic substitution requirements may be overridden by physician if he specifies "medically necessary" or "brand medically necessary" and a diagnosis or explanation in his own hand on ach Rx and the pharmacist places an "X" in the block in lower left corner of claim.

You must bill the State the same price you charge the cash customer before any special discounts. You will be paid the lessor of that amount or the cost as defined by the State plus a $3.70 professional fee.

If U&C charge is over $100.00 you must call for preauthorization and may request the right to reduce quantities. You cannot reduce quantities on your own. For pre-authorization, call (301) 225-1755 in the Baltimore metropolitan area or (800) 492-6008 elsewhere.

Reimburseable OTC Products

1) Insulin
2) Enteric Coated Aspirin–for arthritic patients
3) Oral Ferrous Sulfate–specific quantities & dosage forms
4) Vaporizers, Humidifiers–under supply program
5) Syringes–under supply program

Rules for Condoms

1) Male or female patient must have an eligible card.
2) Minimum amount dispensed is a dozen.
3) Recipient must sign the form where a prescriber's signature would normally go.
4) There is no copayment required for any patient.
5) NDC# 00997-1111-00–Non-lubricated
   00997-2222-00–lubricated
   *No lambskin condoms are covered
6) Write the word "original" immediately below the refill block
7) Fill as if a new prescription.

Special Medicaid NDC numbers

1cc Insulin Syringes	00966-2222-00
½ Syringes	00966-3333-00
Other Syringes & needles	00966-1111-00
Compounded	00998-0000-00
NO NDC Number	00999-0000-00

TABLE 1
Maryland Medical Assistance List of Approved Interchangeable Multiple Source Drugs

Product and Strength	Dosage Form
(1) Acetaminophen/Butalbital/ Caffeine 325 mg; 50 mg; 40 mg (100's)	Tablets
(2) Acetaminophen/Codeine Phosphate 120 mg/5 ml; 12.5 ml (480 ml)	Elixir
(3) Acetaminophen/Codeine Phosphate 300 mg; 15 mg (1000's)	Tablets
(4) Acetaminophen/Codeine Phosphate 300 mg; 30 mg (1000's)	Tablets
(5) Acetaminophen/Codeine Phosphate 300 mg; 60 mg (100's)	Tablets
(6) Acetaminophen/ Hydrocodone Bitartrate 500 mg; 5 mg (100's)	Tablets
(7) Acetaminophen/Oxycodone HCl 325 mg; 5 mg (100's)	Tablets

	(8)	Acetaminophen/ Propoxyphene HCl 650 mg; 65 mg (500's)	Tablets
	(9)	Acetaminophen/ Propoxyphene Napsylate 650 mg; 100 mg (500's)	Tablets
	(10)	Acetazolamide 250 mg (1000's)	Tablets
	(11)	Acetic Acid, Glacial/ Hydrocortisone 2%; 1% (10 ml)	Otic Solution/Drops
	(12)	Allopurinol 100 mg (1000's)	Tablets
	(13)	Allopurinol 300 mg (500's)	Tablets
	(14)	Amantidine HCl 100 mg (100's)	Capsules
**	(15)	Amiloride HCl/ Hydrochlorothiazide 5 mg; 50 mg (100's)	Tablets
	(16)	Aminophylline 105 mg/5 ml (240 ml)	Oral Liquid
	(17)	Aminophylline 100 mg (1000's)	Tablets
	(18)	Aminophylline 200 mg (1000's)	Tablets
	(19)	Amitriptyline HCl 10 mg (1000's)	Tablets
	(20)	Amitriptyline HCl 25 mg (1000's)	Tablets
	(21)	Amitriptyline HCl 50 mg (1000's)	Tablets
	(22)	Amitriptyline HCl 75 mg (100's)	Tablets
	(23)	Amitriptyline HCl 100 mg (100's)	Tablets
	(24)	Amitriptyline HCl/ Chlordiazepoxide Eq 12.5 mg; 5 mg (100's)	Tablets
	(25)	Amitriptyline HCl/ Chlordiazepoxide Eq 25 mg; 10 mg (100's)	Tablets
	(26)	Amitriptyline HCl/ Perphenazine 10 mg; 2 mg (100's)	Tablets
	(27)	Amitriptyline HCl/ Perphenazine 25 mg; 2 mg (100's)	Tablets
	(28)	Amitriptyline HCl/ Perphenazine 25 mg; 4 mg (100's)	Tablets
	(29)	Amoxicillin 250 mg (500's)	Capsules
	(30)	Amoxicillin 500 mg (100's)	Capsules
	(31)	Amoxicillin 125 mg/5 ml (80 ml, 100 ml, 150 ml)	Oral Powder for Reconstitution
	(32)	Amoxicillin 250 mg/5 ml (80 ml, 100 ml, 150 ml)	Oral Powder for Reconstitution
	(33)	Ampicillin/Ampicillin Trihydrate 250 mg (500's)	Capsules
	(34)	Ampicillin/Ampicillin Trihydrate 500 mg (500's)	Capsules
	(35)	Ampicillin/Ampicillin Trihydrate 125 mg/5 ml (100 ml, 200 ml)	Powder for Reconstitution
	(36)	Ampicillin/Ampicillin Trihydrate 250 mg/5 ml (100 ml, 200 ml)	Powder for Reconstitution
	(37)	Aspirin/Butalbital/Caffeine 325 mg; 50 mg; 40 mg (1000's)	Tablets
	(38)	Aspirin/Caffeine/ Propoxyphene HCl 389 mg; 32.4 mg; 65 mg (1000's)	Capsules
	(39)	Aspirin/Carisoprodol 325 mg; 200 mg (100's)	Tablets
	(40)	Aspirin/Meprobamate 325 mg; 200 mg (100's)	Tablets
**	(41)	Aspirin/Methocarbamol 325 mg; 400 mg (100's)	Tablets
	(42)	Aspirin/Oxycodone HCl/ Oxycodone Terephthalate 325 mg; 4.5 mg; 0.38 mg (100's)	Tablets
	(43)	Atropin Sulfate/ Diphenoxylate HCl 0.25 mg/5 ml; 2.5 mg/5 ml (60 ml)	Oral Solution
	(44)	Atropine Sulfate/ Diphenoxylate HCl 0.025 mg; 2.5 mg (1000's)	Tablets
	(45)	Bacitracin 500 units/G (3.5 G)	Ophthalmic Ointment
**	(46)	Bacitracin Zinc/ Hydrocortisone/ Neomycin Sulfate/ Polymyxin B Sulfate 400 units/G; 1%; Eq, 3.5 mg base/G 10,000 units/G (3.5 G)	Ophthalmic Ointment
	(47)	Baciracin Zinc/Neomycin Sulfate/Polymyxin B Sulfate, 400 units/G; eq 3.5 mg/G; 10,000 units/G (3.5 G)	Ophthalmic Ointment
*	(48)	Baclofen 10 mg (100's)	Tablets
*	(49)	Benztropine Mesylate 0.5 mg (100's)	Tablets
*	(50)	Benztropine Mesylate 1 mg (100's)	Tablets
*	(51)	Benztropine Mesylate 2 mg (100's)	Tablets
	(52)	Betamethasone Dipropionate eq. 0.05% base (15 G, 45 G)	Topical Cream[a]
	(53)	Betamethasone Dipropionate eq. 0.05% base (15 G, 45 G)	Topical Ointment[b]
	(54)	Betamethasone Valerate 0.1% (15 G, 45 G)	Topical Cream
	(55)	Betamethasone Valerate 0.1% (60 ml)	Topical Lotion
	(56)	Betamethasone Valerate 0.1% (15 G, 45 G)	Topical Ointment
	(57)	Bethanechol Chloride 25 mg (100's)	Tablets
	(58)	Bromodiphenhydramine HCl/Codeine Phosphate 12.5 mg/5 ml; 10 mg/5 ml (3840 ml)	Syrup
**	(59)	Brompheneramine Maleate/ Codeine Phosphate/ Phenylpropanolamine HCl 2 mg/5 ml; 10 mg/5 ml; 12.5 mg/5 ml (480 ml)	Oral Syrup
	(60)	Butabarbital Sodium 30 mg/5 ml (3840 ml)	Elixir
	(61)	Butabarbital Sodium 15 mg (100's)	Tablets
	(62)	Butabarbital Sodium 30 mg (1000's)	Tablets
	(63)	Caffeine/Ergotamine Tartrate 100 mg; 1 mg (100's)	Tablets
*	(64)	Carbamazepine 100 mg (100's)	Chewable Tablets
	(65)	Carbamazepine 200 mg (1000's)	Tablets
	(66)	Carisoprodol 350 mg (100's)	Tablets
	(67)	Cefadroxil 500 mg (50's)	Capsules
**	(68)	Cefadroxil Eq 1 G base (24's)	Tablets
	(69)	Cephalexin Eq 250 mg base (100's)	Capsules
	(70)	Cephalexin Eq 500 mg base (100's)	Capsules

* (71)	Cephalexin Eq 125 mg base/5 ml (100 ml, 200 ml)	Oral Powder for Reconstitution
* (72)	Cephalexin Eq 250 mg base/5 ml (100 ml, 200 ml)	Oral Powder for Reconstitution
(73)	Cephradine 500 mg (100's)	Capsules
(74)	Chloramphenicol 1% (3.5 G)	Ophthalmic Ointment
(75)	Chloramphenicol 0.5% (7.5 ml)	Ophthalmic Sol/Drops
(76)	Chlordiazepoxide HCl 5 mg (500's)	Capsules
(77)	Chlordiazepoxide HCl 10 mg (500's)	Capsules
(78)	Chlordiazepoxide HCl 25 mg (500's)	Capsules
(79)	Chlorothiazide 500 mg (1000's)	Tablets
* (80)	Chlorzoxazone 500 mg (100's)	Tablets
(81)	Chlorpromazine HCl 30 mg/ml (120 ml)	Oral Concentrate
(82)	Chlorpropamide 100 mg (1000's)	Tablets
(83)	Chlorpropamide 250 mg (1000's)	Tablets
(84)	Chlorthalidone 25 mg (1000's)	Tablets
(85)	Chlorthalidone 50 mg (1000's)	Tablets
(86)	Chlorthalidone/Clonidine 15 mg; 0.1 mg (100's)	Tablets
(87)	Chlorthalidone/Clonidine HCl 15 mg; 0.2 mg (100's)	Tablets
(88)	Chlorthalidone/Clonidine HCl 15 mg; 0.3 (100's)	Tablets
(89)	Clofibrate 500 mg (100's)	Capsules
(90)	Clonidine HCl 0.1 mg (1000's)	Tablets
(91)	Clonidine HCl 0.2 mg (1000's)	Tablets
(92)	Clonidine HCl 0.3 mg (1000's)	Tablets
(93)	Clorazepate Dipotassium 3.75 mg (100's)	Tablets
(94)	Clorazepate Dipotassium 7.5 mg (100's)	Tablets
(95)	Clorazepate Dipotassium 15 mg (100's)	Tablets
(96)	Codeine Phosphate/ Phenylephrine HCl/ Promethazine HCl 10 mg/ 5 ml; 5 mg/5 ml; 6.25 mg/ 5 ml (3840 ml)	Syrup
(97)	Codeine Phosphate/ Promethazine HCl 10 mg/ 5 ml; 6.25 mg/5 ml (3840 ml)	Syrup
(98)	Codeine Phosphate/ Pseudoephedrine HCl/ Triprolidine HCl 10 mg/5 ml; 30 mg/5 ml; 1.25 mg/5 ml (480 ml)	Syrup
** (99)	Cyproheptadine HCl 2 mg/5 ml (480 ml)	Syrup
(100)	Cyproheptadine HCl 4 mg (1000's)	Tablets
(101)	Danazol 200 mg (100's)	Capsules
(102)	Desipramine HCl 25 mg (100's)	Tablets
(103)	Desipramine HCl 50 mg (100's)	Tablets
*(104)	Desipramine HCl 150 mg (50's)	Tablets
(105)	Desonide 0.05% (15 G, 60 G)	Topical Cream
*(106)	Desonide 0.05% (15 G, 60 G)	Topical Ointment

(107)	Dexamethasone/Neomycin Sulfate/Polymyxin B Sulfate 0.1%; Eq 3.5 mg base/ml; 10,000 units/ml (5 ml)	Ophthalmic Suspension/Drops
(108)	Dexamethasone/Neomycin Sulfate/Polymyxin B Sulfate 0.1%; Eq 3.5 mg base/G; 10,000 U/G (3.5 G)	Ophthalmic Ointment
(109)	Dexamethasone Sodium Phosphate 0.05% (3.5 G)	Ophthalmic Ointment
(110)	Dextromethorphan Hydrobromide/ Promethazine HCl 15 mg/ 5 ml; 6.25 mg/5 ml (3840 ml)	Syrup
(111)	Diazepam 2 mg (1000's)	Tablets
(112)	Diazepam 5 mg (1000's)	Tablets
(113)	Diazepam 10 mg (1000's)	Tablets
(114)	Dicloxocillin Sodium 250 mg (100's)	Capsules
(115)	Dicloxocillin Sodium 500 mg (100's)	Capsules
(116)	Dicyclomine HCl 10 mg (1000's)	Capsules
(117)	Dicyclomine HCl 20 mg (1000's)	Tablets
(118)	Diphenhydramine HCl 25 mg (1000's)	Capsules
(119)	Diphenydramine HCl 50 mg (1000's)	Capsules
(120)	Diphenydramine HCl 12.5 mg/5 ml (3480 ml)	Elixir
(121)	Disopyramide Phosphate Eq 100 mg base (100's)	Capsules
(122)	Disopyramide Phosphate Eq 150 mg base (100's)	Capsules
(123)	Disopyramide Phosphate Eq 150 mg base (100's)	Controlled Release Capsules
(124)	Doxepin HCl Eq 10 base (100's)	Capsules
(125)	Doxepin HCl Eq 25 mg base (100's)	Capsules
(126)	Doxepin HCl Eq 50 mg base (100's)	Capsules
(127)	Doxepin HCl Eq 75 mg base (100's)	Capsules
(128)	Doxepin HCl Eq 100 mg base (100's)	Capsules
**(129)	Doxepin HCl Eq 150 mg base (100's)	Capsules
(130)	Doxycycline Hyclate 100 mg (50's)	Capsules
(131)	Doxycycline Hyclate 100 mg (50's)	Tablets
(132)	Ergocalciferol 50,000 IU (100's)	Capsules
(133)	Ergoloid Mesylates 1 mg (100's)	Oral Tablets
(134)	Erythromycin 5 mg/G (3.5 G)	Ophthalmic Ointment
(135)	Erythromycin 2% (60 ml)	Topical Solution
(136)	Erythromycin 250 mg (100's)	Enteric Coated Tablets
(137)	Erythromycin 333 mg (100's)	Enteric Coated Tablets
(138)	Erythromycin Estolate 125 mg/5 ml (480 ml)	Oral Suspension
(139)	Erythromycin Estolate 250 mg/5 ml (480 ml)	Oral Suspension
(140)	Erythromycin Ethylsuccinate 200 mg base/5 ml (480 ml)	Oral Suspension
(141)	Erythromycin Ethylsuccinate 400 mg base/5 ml (480 ml)	Oral Suspension

(142)	Erythromycin Ethylsuccinate Eq 400 mg base (100's)	Tablets
(143)	Erythromycin Stearate 250 mg (500's)	Tablets
(144)	Erythromycin Stearate 500 mg (100's)	Tablets
*(145)	Fenoprofen Calcium Eq 200 mg base (100's)	Capsules
*(146)	Fenoprofen Calcium Eq 300 mg base (100's)	Capsules
*(147)	Fenoprofen Calcium Eq 600 mg base (100's)	Tablets
(148)	Fluocinolone Acetonide 0.01% (15 G, 60 G)	Topical Cream
(149)	Fluocinolone Acetonide 0.025% (15 G, 60 G)	Topical Cream
(150)	Fluocinolone Acetonide 0.01% (60 ml)	Topical Lotion
(151)	Fluocinolone Acetonide 0.025% (15 G, 60 G)	Topical Ointment
**(152)	Fluocinonide 0.05% (15 G, **30 G, 60 G)	Topical Cream
(153)	Fluorometholone 0.1% (5 ml, 10 ml, 15 ml)	Ophthalmic Suspension/Drops
(154)	Fluphenazine HCl 1 mg (50's)	Tablets
(155)	Fluphenazine HCl 2.5 mg (100's)	Tablets
(156)	Fluphenazine HCl 5 mg (50's)	Tablets
(157)	Flurazepam HCl 15 mg (500's)	Capsules
(158)	Flurazepam HCl 30 mg (500's)	Capsules
(159)	Folic Acid 1 mg (1000's)	Tablets
(160)	Furosemide 10 mg/ml (60 ml, 120 ml)	Oral Solution
(161)	Furosemide 20 mg (1000's)	Tablets
(162)	Furosemide 40 mg (1000's)	Tablets
(163)	Furosemide 80 mg (500's)	Tablets
(164)	Gentamicin Sulfate Eq 3 mg base/G (3.5 G)	Ophthalmic Ointment
(165)	Gentamicin Sulfate Eq 3 mg/base ml (5 ml)	Ophthalmic Solution/ Drops
(166)	Gentamicin Sulfate Eq 1 mg base/G (15 G)	Topical Cream
(167)	Gentamicin Sulfate Eq 1 mg base/G (15 G)	Topical Ointment
(168)	Gramacidin/Neomycin Sulfate/Polymyxin B Sulfate 0.025 mg/ml; eq. 1.75 mg base/ml; 10,000 units/ml (10 ml)	Ophthalmic Solution/ Drops
(169)	Haloperidol 0.5 mg (100's)	Tablets
(170)	Haloperidol 1 mg (100's)	Tablets
(171)	Haloperidol 2 mg (100's)	Tablets
(171)	Haloperidol 5 mg (100's)	Tablets
(173)	Haloperidol 10 mg (100's)	Tablets
*(174)	Haloperidol 20 mg (100's)	Tablets
(175)	Haloperidol Lactate Eq 2 mg/ml (15 ml, 120 ml)	Oral Concentrate
(176)	Homatropine Methylbromide/ Hydrocodone Bitartrate 1.5 mg/5 ml; 5 mg/5 ml (480 ml)	Syrup
(177)	Hydralazine HCl 10 mg (1000's)	Tablets
(178)	Hydralazine HCl 25 mg (1000's)	Tablets
(179)	Hydralazine HCl 50 mg (1000's)	Tablets
**(180)	Hydralazine HCl 100 mg (100's)	Tablets
(181)	Hydralazine HCl/ Hydrochlorothiazide 25 mg; 25 mg (100's)	Capsules
(182)	Hydrochlorothiazide 25 mg (1000's)	Tablets
(183)	Hydrochlorothiazide 50 mg (1000's)	Tablets
(184)	Hydrochlorothiazide/ Methyldopa 15 mg; 250 mg (100's)	Tablets
(185)	Hydrochlorothiazide/ Methyldopa 25 mg; 250 mg (100's)	Tablets
(186)	Hydrochlorothiazide/ Propranolol HCl 25 mg; 40 mg (100's)	Tablets
(187)	Hydrochlorothiazide/ Propanolol HCl 25 mg; 80 mg (100's)	Tablets
(188)	Hydrochlorothiazide/ Spironolactone 25 mg; 25 mg (1000's)	Tablets
(189)	Hydrochlorothaizide/ Triamterene 50 mg; 75 mg (500's)	Tablets
**(190)	Hydrocortisone 1% (**20 G, 30 G, 454 G)	Topical Cream
(191)	Hydrocortisone 2.5% (30 G)	Topical Cream
(192)	Hydrocortisone 1% (120 ml)	Topical Lotion
(193)	Hydrocortisone 1% (20 G, 30 G, 454 G)	Topical Ointment
**(194)	Hydrocortisone 2.5% 20 G	Topical Ointment
(195)	Hydrocortisone/Neomycin Sulfate/Polymyxin B Sulfate 1%; eq 3.5 mg base/ml; 10,000 units/ml (10 ml)	Otic Solution/Drops[c]
(196)	Hydrocortisone/Neomycin Sulfate/Polymyxin B Sulfate 1%; eq 3.5 mg base/ml; 10,000 units/ml (10 ml)	Otic Suspension/ Drops[c]
(197)	Hydroxyzine HCl 10 mg/5 ml (480 ml)	Syrup
(198)	Hydroxyzine HCl 10 mg (500's)	Tablets
(199)	Hydroxyzine HCl 25 mg (500's)	Tablets
(200)	Hydroxyzine HCl 50 mg (500's)	Tablets
(201)	Hydroxyzine Pamoate 25 mg (500's)	Capsules
(202)	Hydroxyzine Pamoate 50 mg (100's)	Capsules
(203)	Ibuprofen 300 mg (50's)	Tablets
(204)	Ibuprofen 400 mg (500's)	Tablets
(205)	Ibuprofen 600 mg (500's)	Tablets
(206)	Ibuprofen 800 mg (500's)	Tablets
(207)	Imipramine HCl 25 mg (1000's)	Tablets
(208)	Imipramine HCl 50 mg (1000's)	Tablets
(209)	Indomethacin 25 mg (1000's)	Capsules
(210)	Indomethacin 50 mg (500's)	Capsules
(211)	Indomethacin 75 mg (100's)	Controlled Release Capsules
(212)	Isoetharine HCl 1% (10 ml)	Inhalation Solution
(213)	Isoniazid 300 mg (100's)	Tablets
**(214)	Isosorbide Dinitrate 5 mg (100's)	Oral Tablets
**(215)	Isosorbide Dinitrate 10 mg (100's)	Oral Tablets
**(216)	Isosorbide Dinitrate 20 mg (100's)	Oral Tablets
**(217)	Isosorbide Dinitrate 30 mg (100's)	Oral Tablets
(218)	Lidocaine HCl 2% (100 ml)	Oral Solution, Viscous
(219)	Lindane 1% (60 ml, 480 ml)	Shampoo
(220)	Lindane 1% (60 ml, 480 ml)	Topical Lotion
*(221)	Lisinopril 5 mg (100's)	Tablets

*(222)	Lisinopril 10 mg (100's)	Tablets
*(223)	Lisinopril 20 mg (100's)	Tablets
(224)	Lithium Carbonate 300 mg (100's)	Capsules
(225)	Lithium Carbonate 300 mg (1000's)	Tablets
**(226)	Lithium Citrate Eq 300 mg Carbonate/5 ml (500 ml)	Oral Syrup
(227)	Lorazepam 0.5 mg (100's)	Tablets
(228)	Lorazepam 1 mg (1000's)	Tablets
(229)	Lorazepam 2 mg (100's)	Tablets
**(230)	Loxapine Succinate 10 mg (100's)	Capsules
**(231)	Loxapine Succinate 25 mg (100's)	Capsules
*(232)	Loxapine Succinate 50 mg (100's)	Capsules
(233)	Maprotiline HCl 25 mg (100's)	Tablets
(234)	Maprotiline HCl 50 mg (100's)	Tablets
(235)	Meclizine HCl 12.5 mg (1000's)	Tablets
(236)	Meclizine HCl 25 mg (1000's)	Tablets
(237)	Meclofenamate Sodium 50 mg (100's)	Capsules
(238)	Meclofenamate Sodium 100 mg (100's)	Capsules
(239)	Medroxyprogesterone Acetate 10 mg (100's)	Tablets
**(240)	Megesterol Acetate 40 mg (100's)	Tablets
**(241)	Metaproterenol Sulfate 10 mg/5 ml (480 ml)	Syrup
(242)	Meperidine HCl 50 mg (100's)	Tablets
(243)	Meperidine HCl mg (100's)	Tablets
(244)	Meprobamate 400 mg (1000's)	Tablets
*(245)	Metaproterenol Sulfate 10 mg (100's)	Tablets
*(246)	Metaproterenol Sulfate 20 mg (100's)	Tablets
(247)	Methocarbamol 500 mg (500's)	Tablets
(248)	Methocarbamol 750 mg (500's)	Tablets
(249)	Methyclothiazide 2.5 mg (100's)	Tablets
(250)	Methyclothiazide 5 mg (100's)	Tablets
(251)	Methyldopa 125 mg (100's)	Tablets
(252)	Methyldopa 250 mg (1000's)	Tablets
(253)	Methyldopa 500 mg (500's)	Tablets
(254)	Methylphenidate 5 mg (100's)	Tablets
(255)	Methylphenidate 10 mg (100's)	Tablets
(256)	Methylphenidate 20 mg (100's)	Tablets
**(257)	Metoclopramide HCl Eq 5 mg base/5 ml (480 ml)	Syrup
(258)	Metoclopramide HCl Eq 10 mg base (500's)	Tablets
(259)	Metolazone 2.5 mg (100's)	Tablets
(260)	Metolazone 5 mg (100's)	Tablets
(261)	Metronidazole 250 mg (100's)	Tablets
(262)	Metronidazole 500 mg (100's)	Tablets
**(263)	Minoxidil 2.5 mg (100's)	Tablets
(264)	Minoxidil 10 mg (100's)	Tablets
(265)	Naphazoline HCl 0.1% (15 ml)	Ophthalmic Solution/ Drops
**(266)	Nifedepine 10 mg (100's)	Capsules
**(267)	Nifedepine 20 mg (100's)	Capsules
*(268)	Nitrofurantoin, Macrocrystalline, 50 mg (100's)	Capsules
*(269)	Nitrofurantoin, Macrocrystalline, 100 mg (100's)	Capsules
(270)	Nystatin 100,000 units/ml (60 ml)	Oral Suspension
(271)	Nystatin 100,000 units G (15 G, 30 G)	Topical Cream
(272)	Nystatin 100,000 units/G (15 G)	Topical Ointment
(273)	Nystatin 100,000 units (15's, 30's)	Vaginal Tablets
(274)	Nystatin/Triamcinolone Acetonide 100,000 units/ G; 0.1% (15 G, 30 G, 60 G)	Topical Cream
**(275)	Nystatin/Triamcinolone Acetonide 100,000 units/ G; 0.1% (15 G, 30 G, **60 G)	Topical Ointment
(276)	Orphenadrine Citrate 100 mg (100's)	Controlled Release Tablets
*(277)	Oxazepam 10 mg (100's)	Capsules
*(278)	Oxazepam 15 mg (100's)	Capsules
*(279)	Oxazepam 30 mg (100's)	Capsules
(280)	Oxazepam 15 mg (100's)	Tablets
(281)	Oxtriphylline 200 mg (100's)	Enteric Coated Tablets
**(282)	Oxybutinin Chloride 5 mg (100's)	Tablets
(283)	Penicillin V Potassium 125 mg/5 ml (100 ml, 200 ml)	Oral Powder for Reconstitution
(284)	Penicillin V Potassium 250 mg/5 ml (100 ml, 200 ml)	Oral Powder for Reconstitution
(285)	Penicillin V Potassium 250 mg (1000's)	Tablets
(286)	Penicillin V Potassium 500 mg (1000's)	Tablets
**(287)	Perphenazine 2 mg (100's)	Tablets
**(288)	Perphenazine 4 mg (100's)	Tablets
**(289)	Perphenazine 8 mg (100's)	Tablets
**(290)	Perphenazine 16 mg (100's)	Tablets
(291)	Phenylbutazone 100 mg (100's)	Tablets
(292)	Phenylephrine HCl/ Promethazine HCl 5 mg/5 ml; 6.25 mg/5 ml (480 ml)	Syrup
(293)	Phenytoin Sodium 100 mg (1000's)	Extended Release Capsules
**(294)	Prazepam 5 mg (100's)	Capsules
**(295)	Prazepam 10 mg (100's)	Capsules
(296)	Prednisolone Acetate/ Sulfacetamide Sodium 0.5%; 10% (5 ml, 15 ml)	Ophthalmic Suspension/Drops
(297)	Prednisone 5 mg (1000's)	Tablets
(298)	Prednisone 10 mg (1000's)	Tablets
(299)	Prednisone 20 mg (500's)	Tablets
(300)	Primidone 250 mg (1000's)	Tablets
(301)	Probenecid 500 mg (1000's)	Tablets
(302)	Procainamide 250 mg (1000's)	Capsules
(303)	Procainamide 250 mg (100's)	Controlled Release Tablets
(304)	Procainamide 375 mg (100's)	Capsules
(305)	Procainamide 500 mg (100's)	Capsules
(306)	Procainamide 500 mg (100's)	Controlled Release Tablets
(307)	Procainamide 750 mg (100's)	Controlled Release Tablets
(308)	Prochlorperazine Maleate 5 mg (100's)	Tablets
(309)	Prochlorperazine Maleate 10 mg (100's)	Tablets
(310)	Prochlorperazine Maleate 25 mg (100's)	Tablets

(311)	Promethazine 6.25 mg/5 ml (480 ml)	Syrup
(312)	Propantheline Bromide 15 mg (100's)	Tablets
(313)	Propoxyphene HCl 65 mg (1000's)	Capsules
(314)	Propranolol HCl 10 mg (1000's)	Tablets
(315)	Propranolol HCl 20 mg (1000's)	Tablets
(316)	Propranolol HCl 40 mg (1000's)	Tablets
(317)	Propranolol HCl 60 mg (100's)	Tablets
(318)	Propranolol HCl 80 mg (500's)	Tablets
(319)	Quinidine Gluconate 324 mg (100's)	Controlled Release Tablets
(320)	Quinidine Sulfate 200 mg (100's)	Tablets
(321)	Quinidine Sulfate 300 mg (100's)	Tablets
(322)	Selenium Sulfide 2.5% (120 ml)	Lotion/Shampoo
(323)	Silver Sulfadiazine 1% (50 G, 400 G)	Topical Cream
(324)	Spironolactone 25 mg (1000's)	Tablets
(325)	Sulfacetamide Sodium 10% (3.5 G)	Ophthalmic Ointment
(326)	Sulfacetamide Sodium 10% (15 ml)	Ophthalmic Solution, Drops
(327)	Sulfabenzamide/ Sulfacetamide/ Sulfathiazole/Urea 3.7%; 2.86%; 3.2%; 0.64% (78 G)	Vaginal Cream
(328)	Sulfamethoxazole 500 mg (100's)	Tablets
(329)	Sulfamethoxazole/ Trimethoprim 200 mg/5 ml; 40 mg/5 ml (480 ml)	Pediatric Suspension, Oral
(330)	Sulfamethoxazole/ Trimethoprim 200 mg/5 m; 40 mg/5 ml (480 ml)	Oral Suspension
(331)	Sulamethoxazole/ Trimethoprim 400 mg; 80 mg (100's)	Tablets
(332)	Sulfamethoxazole/ Trimethoprim 800 mg; 160 mg (500's)	Tablets
(333)	Sulfasalazine 500 mg (500's)	Tablets
(334)	Temazepam 15 mg (100's)	Capsules
(335)	Tetracycline HCl 125 mg/5 ml (480 ml)	Syrup
(336)	Tetracycline HCl 250 mg (1000's)	Capsules
(337)	Tetracycline HCl 500 mg (1000's)	Capsules
(338)	Theophylline 300 mg (100's) (500's)	Controlled Release Tablets
(339)	Theophylline 80 mg/15 ml (480 ml)	Elixir
(340)	Thioridazine HCl 30 mg/ml (120 ml)	Oral Concentrate
(341)	Thioridazine HCl 10 mg (1000's)	Tablets
(342)	Thioridazine HCl 15 mg (100's)	Tablets
(343)	Thioridazine HCl 25 mg (1000's)	Tablets
(344)	Thioridazine HCl 50 mg (1000's)	Tablets
(345)	Thioridazine HCl 100 mg (100's)	Tablets
(346)	Thioridazine HCl 150 mg (100's)	Tablets
(347)	Thioridazine HCl 200 mg (100's)	Tablets
(348)	Thiothixine 1 mg (100's)	Capsules
(349)	Thiothixine 2 mg (100's)	Capsules
(350)	Thiothixine 5 mg (100's)	Capsules
(351)	Thiothixine 10 mg (100's)	Capsules
**(352)	Thiothixine 20 mg (100's)	Capsules
(353)	Thiothixine Eq 5 mg base/ ml (120 ml)	Oral Concentrate
(354)	Tolazamide 100 mg (100's)	Tablets
(355)	Tolazamide 250 mg (200's)	Tablets
(356)	Tolazamide 500 mg (100's)	Tablets
(357)	Tolbutamide 500 mg (1000's)	Tablets
(358)	Trazodone 50 mg (100's)	Tablets
(359)	Trazodone 100 mg (100's)	Tablets
*(360)	Trazodone HCl 150 mg (100's)	Tablets
(361)	Triamcinolone Acetonide 0.025% (15 G, 80 G, 454 G)	Topical Cream
(362)	Triamcinolone Acetonide 0.1% (15 G, 80 G, 454 G)	Topical Cream
(363)	Triamcinolone Acetonide 0.1% (15 G, 80 G)	Topical Ointment
(364)	Triamcinolone Acetonide 0.25% (15 G, 80 G)	Topical Ointment
(365)	Trifluoperazine HCl 2 mg (100's)	Tablets
(366)	Trifluoperazine HCl 5 mg (100's)	Tablets
(367)	Trifluoperazine HCl 10 mg (100's)	Tablets
(368)	Trihexyphenidyl HCl 2 mg (1000's)	Tablets
(369)	Trihexyphenidyl HCl 5 mg (100's)	Tablets
(370)	Valproate Sodium Eq 250 mg base/5 ml (480 ml)	Syrup
(371)	Valproic Acid 250 mg (100's)	Capsules
(372)	Verapamil 80 mg (100's)	Tablets
(373)	Verapamil 120 mg (100's)	Tablets
(374)	Warfarin Sodium 2 mg (100's)	Tablets
(375)	Warfarin Sodium 5 mg (100's)	Tablets

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* Added to list February 15, 1989.

** Added to list January 15, 1990.

[a] Diprolene cream is *not* interchangeable and must be dispensed when specifically prescribed.

[b] Diprolene ointment is *not* interchangeable and must be dispensed when specifically prescribed.

[c] Hydrocortisone/Neomycin Sulfate/Polymyxin B Sulfate Otic Solution and Hydrocortisone Neomycin Sulfate Polymyxin B Sulfate Otic Suspension are not interchangeable.

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BC/BS Eligibility—(301) 561-8838 or (800) 433-2763
Pharmacy Claims/Services—(301) 561-7270
Blue Line—(301) 337-2055 or (800) 248-8410
Maryland Medical Services/Pharmacy Relations—(301) 683-8181
Fraud and Abuse—(301) 494-5480 or (800) 336-4522

Blue Cross Generic Program

The following brand name drugs must be dispensed as generics or the patient may opt to pay the difference between the brand name price and the generic price. This list is *only* for non-state and non-Baltimore City employee plans. The state employee plan, designated by an "M" prefix, and the Baltimore City employee plan, designated by a "P" prefix, use the Medicaid Interchangeable Drug List.

Antivert
Azulfidine
Bactrim & DS
Butisol
Diabinese
Enduron
Hygroton
Indocin
Lasix
Lomotil
Motrin
Orinase
Robaxin
Prostaphlin
Septra & DS
Valisone
Vistaril
Atarax
Aldactazide/Aldactone
Benadryl
Benemid
Elavil
Flagyl
Hytone
Kwell
Librium
Mellaril
Mycostatin
Pronestyl
Robaxisal
Selsun
Tylenol/Cod.
Vibramycin

General Notes

"M" Program (State employees)— uses DESI list and does not pay for anorexants. (See rules for Medicaid).
"P" Program (City employees)— Does not pay for Rx vitamins.

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Third-Party Chart 1: General Insurers

Company	Aetna	APS	NPA	Medimet	PAID	PDI	Penn Scripts	Tristate
Cost Basis	ACQ	AWP	AWP	GE–U/C others ACQ	Many ACQ Varies	AWP	AWP	AWP
Fee	$4.00	up to $2.75	Lower of U/C or AWP + fee Fees vary	$3.20	varies	$2.75	Lower of U/C or AWP + $2.75–$3.25	$2.70
Billing	UCF/tape	UCF/tape	UCF/tape	UCF/tape	UCF/tape	UCF/tape	UCF/tape or Electronic	UCF
Dependent Age	19/23	Most 19/23	Most >19	GM 19/25 Most 19/25 Some no limit	Most 19/23	19/23	Ok, if name on Rx card	18
Refills Allowed	1 year	By law	1 year or By law	1 year or By law	By law	By law	By law	By law
Generics Required?	No	See card. If generic, use State formulary	Some plans split copays	GM–MAC unless DAW. Some–MAC Use FDA list	Many plans USE FDA list	See card Some have split copays.	Patient Copay Incentive	No deduct if generic
Doctor List?	No	No	No	No	No	No	No	No
Preauth. Required?	No	$100	No	No	No	No	No	$75
Maximum Days/Doses	Most 34 days Some 100	See APS chart	Greater 34 days/100 doses	GM–34 days 100/200 doses (2 lists) Most 34 days/ or 100 units	Most 34 days Some plans 100 units.	Greater of 34 days/100 doses	Greater of 34 days/100 doses	100 days
Maintenance List	100 day if on list	No	No	Some plans 100 or 200 day lists.	No	No	No	No
Maryland Rx's Only	If list '2' on card	Yes	Yes	Yes	Most Plans	Yes	Yes	Yes
Notes	Send Transmittal	$1.25 compound fee	$1.00 compound fee		Provides chart with plan rules. No DESI list with some plans.		$500/year maximum on some plans. No nursing home coverage.	

Company	Aetna	APS	NPA	Medimet	PAID	PDI	Penn Scripts	Tristate
Nicorette	Some groups	Unless 2 on card	Most No	Yes	Som plans	Yes	No	Yes
Rogaine	No	No	Most No	No	No	Yes	No	Preauth
Retin A	Yes	Some plans	Up to Age 19	Yes	Some plans	Yes	Up to Age 30	Preauth
Cyclosporine	Yes	Preauth	Preauth	Yes	Some plans	Yes	Yes	Preauth
Retrovir	Yes	Preauth	Most No	Yes	Some plans	No	No	Preauth
Fertility (ie: Clomid)	Yes	Unless P on card	Most No	GM Yes Most Yes	Some plans	No	No	Yes
Rx Vitamins	Yes	Unless N on card	Most No	Yes	Some plans	Yes	No	Yes
Anorectics	Yes	Unless N on card	Most No	Yes	Some plans	Yes	No	Yes
BC Pills # of Packs	If "C" on card	3	Plans 1, 3	GM–No Some groups	Some plans	Up to 3 1 ded/pack	Plan A—No Others—Yes	Yes, but not for dependents
Diaphragms & Devices	No	No	No	No	Plan 2D	No	No	No
Insulin Quantity	34 days	Yes	1 month	GM–Yes Others–some	Except 2L and 94	3 vials	Yes, Maximum of cost + 50%	Yes
Syringes		Plan 9 Code F	Yes	GM–Yes with insulin Others–some	Some plans	Up to 30 insulin only	Plan A—No Others—Yes	No
Diabetic Supplies	If List 4 on card	Code F	No	No	Some plans	Some plans	No	No
Injections	Home use only	Some plans	Most plans	Yes	Some plans	No	No	No

Third-Party Chart 2: General Insurers

Company	Maryland Medicaid	PCS	Lincoln National	PERx	MD-IPA	Johns Hopkins	USA Administrators
Cost Basis	EAC or AWP	varies	AWP	varies	AWP	AWP	AWP or U/C
Fee	$3.70 or U/C	varies	$2.75	varies	$2.50 brand $3.00 generic	$2.00	U/C + 15 cents or AWP + $3.71
Billing	UCF/tape	UCF/tape	UCF/tape	UCF/tape	UCF/tape	UCF	UCF
Dependent Age	By Card	On Card	19/23	18—Students have own card	By Card	By Card	List sent to pharmacy
Refills Allowed	2	1 year	5	1 year or By law	By law	By law	By law
Generics Required?	Yes See List	Some plans	Yes	Yes	Strongly advised	Formulary Pt. pays for brand	State Formulary
Doctor List?	No	No	No	No	No	Only Hopkins Plans MDs	No
Preauth. Required?	No	No	No	No	No	Some drugs	No
Maximum Days/Doses	34 days Some 100 day	Varies	34 days	<34 days or 100 units	>34 days or 100 units	34 days	100 days
Maintenance List	Yes	Yes	No	Yes	Yes	Yes	Yes
Maryland Rx's Only	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Notes	No DESI drugs	Group 34331000 has $50 deduct then 20–30% copayments.			Some $50 deductible plans.	Preauth. for Mevacor and Questran.	No Dental Rx's

Company	Maryland Medicaid	PCS	Lincoln National	PERx	MD-IPA	Johns Hopkins	USA Administrators
Nicorette	Yes	Some plans	No	Yes	No	Preauth.	No
Rogaine	No	No	No	No	No	No	Yes
Retin A	Yes	Some plans	Yes	No	Yes	Yes	Yes
Cyclosporine	Yes	Some	Yes	No	Yes	Yes	Yes
Retrovir	Yes	Yes	Yes	Yes	Yes	Preauth.	Yes
Fertility (ie: Clomid)	Yes	Yes	Yes	No	Yes	Yes	Yes
Rx Vitamins	Yes	Some plans	Yes	No	Yes	Yes	Yes
Anorectics	No	Some plans	Yes	No	Yes	No	Yes
BC Pills # of Packs	6 months supply	Some plans	Medical necessity only	Some plans 1 month supply	3 months 1 copay	1 month	Not for contraceptive purposes
Diaphragms & Devices	Diaphragms	No	No	No	No	No	No
Insulin Quantity	Yes	Yes	Yes	3 vials	Yes	1 vial	Yes
Syringes	Yes	No	No	Up to 100	Yes, with insulin	For insulin only	For insulin only
Diabetic Supplies	No, use Supply Program	No	No	No	Yes	Yes	Yes
Injections	Yes	No	No	No	Preauth.	Preauth.	No

Third-Party Chart 3: General Insurers

Company	Blue Cross General	State Program	Carpenter Fund	CIGNA	GPS	Iron Workers Local 16
Cost Basis	AWP	AWP	AWP	AWP	AWP	AWP
Fee	$3.30	$3.00	$2.60	$2.35	$2.50	$2.50
Billing	UCF/tape	UCF/tape	UCF	UCF/Box	UCF	UCF
Dependent Age	19/23	19/23	19/23	By card	19	19/23
Refills Allowed	1 year	1 year	By law	1 year	5 per year	5
Generics Required?	Yes See List	MD M.A. List	Unless MD requests brand	State Formulary	No	No
Doctor List?	No	No	No	No	No	No
Preauth. Required?	No	No	$100	No	No	No
Maximum Days/Doses	<34 days/ 100 doses	34 days 150 maint	>34 days 100 doses	<34 days or 100 units	34 days	>34 days or 100 doses
Maintenance List	No	Yes	90 days specified	For Allied Signal	Unspecified "Chronic" 90 days supply	No
Maryland Rx's Only	Yes	Yes	Yes	Yes	Yes	Yes
Notes				Compound NDC 77777-7777-77		
Nicorette	Yes	Yes	Yes	No	Yes	No
Rogaine	No	No	No	No	No	No
Retin A	Acne Only	Acne Only	Acne Only	Up to Age 25	Yes	Up to Age 19
Cyclosporine	Yes	Yes	Yes	No	Yes	Yes
Retrovir	Yes	Yes	Yes	No	Yes	Yes
Fertility (ie: Clomid)	Yes	Yes	Preauth.	Yes	Yes	Yes
Rx Vitamins	Yes	No	Yes	Yes	Yes	No
Anorectics	No	No	Yes	Yes	Yes	No
BC Pills # of Packs	If "PCD" 3 months	If "PCD" 3 months	Yes	Yes, except Allied Signal	1 month/ 1 copay	No
Diaphragms & Devices	No	No	Yes	No	No	No
Insulin Quantity	4 vials 1 copay	4 vials 1 copay	Yes	Yes	Yes	No
Syringes	Yes with insulin	Yes	Yes	No, except Allied Signal	No	No
Diabetic Supplies	No	No	No	No, except Allied Signal	No	No
Injections	Yes	Yes	Yes	No	Yes	No

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Third-Party Chart 4: HMOs/PPOs

Company	FreeState	HC200	H-Net Sinai	Chesapeake	Hospital Health Plan	Kaiser	Health Elect	Flex Choice PHN
Cost Basis	AWP	AWP	AWP	AWP	AWP	AWP	AWP	AWP
Fee	$2.45	+8% or $1.00	$2.50	$2.75	$3.00	$3.00	$2.95	$2.95
Billing	UCF	UCF	UCF	UCF/tape	UCF	UCF	EZY-Claim Box	EZY-Claim Box
Dependent Age	By Card	19/23	19/23	By Card	19/25	By Card	19/23	19/23
Refills Allowed	By law	6	6	2	By law	By law	1 year or by law	1 year or by law
Generics Required?	State Formulary	MD M.A. List	MD M.A. List	State Formulary	MD M.A. List	MD M.A. List	Yes	Plans 01, 03 and 05 have lower copays
Doctor List?	Yes	Yes	Yes	No	No	Kaiser Rx blank or ER doctor	No	No
Preauth. Required?	See Formulary	Ornade Seldane Hismanal	No	$100	No	Certain Drugs	AZT Immunosuppressants Fertility, Growth	$75
Maximum Days/Doses	34 days/100 doses	34 days	No	34 days/100 doses	34 days leeway on maintenance	60 days	> of 34 days/or 100 doses	34 days/or 100 doses some <, some >
Maintenance List	See Formulary	No	No	No	No	No	No	No
Maryland Rx's Only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Notes	Microfiche w/ eligibility provided			5500 series plans—add any item covered by Medical Assistance	No copay	Copay reduced for Balt. sites. Some 50% copays or $50 deductibles	10 day initial dose for maint. drugs.	Plan 5 has $50 annual deductible

Company	FreeState	HC200	H-Net Sinai	Chesapeake	Hospital Health Plan	Kaiser	Health Elect	Flex Choice PHN
Nicorette	No	No	Yes	Yes	No	Yes	No	Yes
Rogaine	No	No	No	No	No	No	No	No
Retin A	Yes	Acne only	Up to Age 18	Yes	Preautho.	Acne only	Acne only	Yes
Cyclosporine	Preauth.	No	Preauth.	Preauth.	Preauth.	Preauth.	Preauth. (50% copay)	Yes
Retrovir	Preauth.	Preauth.	Preauth.	Preauth.	Preauth.	Preauth.	Preauth. (50% copay)	Yes
Fertility (ie: Clomid)	Yes	Preauth.	Preauth.	Yes	No	Preauth.	Preauth. (50% copay)	Yes
Rx Vitamins	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Anorectics	Yes	Yes	Yes	Yes	Yes	Yes	No	No
BC Pills # of Packs	Most, 3 packs 1 copay	3 packs 3 copays	Yes	If card says "BC" or 5500 series	Yes	Yes	3 packs 1 copay	3 packs 3 copays
Diaphragms & Devices	Some Cards	No	Yes	Some Cards	No	No	No	No
Insulin Quantity	Yes	Yes 4 vials	Yes	Yes	Yes	Yes	Yes 34 days supply	Yes
Syringes	Yes	100	Yes	Yes with insulin	No	Yes	Yes, with insulin	No
Diabetic Supplies	No on card	No	No	No, Yes if 5500 series	No	Yes	No	No
Injections	No	No	No	No	Yes	Yes	No	Yes

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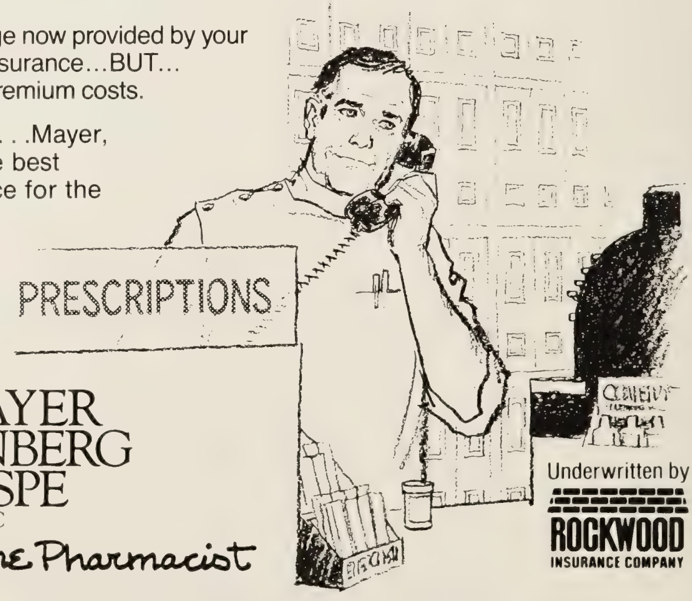

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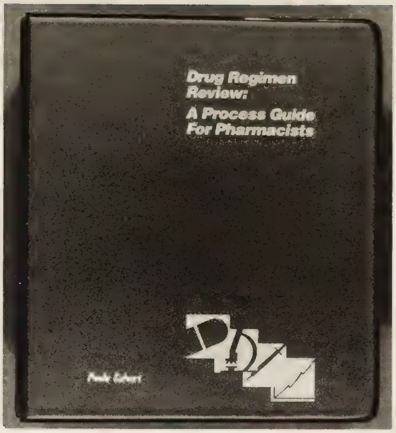
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Continuing Education

Continuing Education Quiz

The Maryland Pharmacist **APRIL 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by June 30, 1990. A continuing education certificate for one contact credit will be mailed to you within 30 days. Please type or print clearly.

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Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? ____________ minutes

Cholesterol: Part II

1. All of the following antilipidemics have been reported to interact with warfarin EXCEPT:
   a. cholestyramine.
   b. gemfibrozil.
   c. clofibrate.
   d. probucol.

2. Lovastatin acts by inhibiting the enzyme:
   a. carbonic anhydrase.
   b. methyl transferase.
   c. G6P dehydrogenase.
   d. HMG-CoA reductase.

3. Which of the following is the most suitable type of laxative to recommend for alleviating cholestyramine-induced constipation?
   a. Bulk forming
   b. Saline cathartic
   c. Stimulant
   d. Stool softener

4. The antilipidemic that is most likely to lead to increased formation of cholesterol gallstones is:
   a. Atromid S.
   b. Choloxin.
   c. Lorelco.
   d. Questran.

5. Cholestyramine and colestipol act by binding with and reducing the absorption of:
   a. bile acids.
   b. cholesterol.
   c. lipases.
   d. triglycerides.

6. The action described in question #5 above:
   a. decreases the excretion of bile acids.
   b. increases the oxidation of cholesterol.
   c. decreases the metabolism of triglycerides.
   d. increases the activation of lipases.

7. Which of the following antilipidemics has been shown in animal studies to reverse the amount of cholesterol plaque?
   a. Atromid S
   b. Choloxin
   c. Lopid
   d. Lorelco

8. All of the following statements about niacin are true EXCEPT:
   a. it is an effective first-line treatment for lowering LDL- and total serum cholesterol.
   b. the major reason for therapeutic failure associated with its use as an antilipidemic is the adverse effects caused by the large doses needed.
   c. its antihypercholesterolemic action is related to its vitamin effects because niacinamide provides the same results.
   d. taking an aspirin tablet 30 to 60 minutes before each dose can lessen its vasodilatory effects.

9. The best time to take a once-daily dose of Mevacor is:
   a. in the morning on arising.
   b. midmorning with a snack.
   c. midafternoon on an empty stomach.
   d. with the evening meal.

10. Cholestyramine and colestipol are most likely to:
    a. elevate circulating blood LDL cholesterol.
    b. lower circulating blood LDL cholesterol.
    c. elevate circulating blood HDL cholesterol.
    d. lower circulating blood HDL cholesterol.

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THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Santi V. Lusco at 254-1772.

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MAY, 1990 VOL. 66 NO. 5

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Pharmacists Are Number One Again!

You've probably already heard it from one of the national pharmacy journals but it bears repeating over and over. For the second consecutive time, the American public has rated pharmacists as the top professionals in honesty and ethical standards according to a new Gallup poll. Sixty-two percent of Americans think pharmacists have high or very high honesty and ethical standards.

Other professionals that ranked in the top five are clergy (55%), physicians and dentists (52% each), and college professors (51%). Although pharmacists pulled ahead of the clergy in the previous poll, we have consistently ranked in the top five since first being included in the nationwide survey. Gallup's results are based on telephone interviews with 1,228 randomly selected adults, aged 18 and older, conducted in mid-February.

But, while the public may think that everything is great about pharmacists, we have a slightly different opinion about ourselves. This month's *Maryland Pharmacist* contains the results of our annual salary and benefits survey. Included in that survey, mailed to every MPhA pharmacist member at the same time Gallup was interviewing the public, were several questions about job satisfaction and future outlooks on the profession.

Even though 65 percent of the respondents felt that the future of the profession was "good" or "excellent," a full 35 percent rated our future as only "fair" or "poor." Many of the comments received on the survey complained about pharmacy's lack of control over its own profession, the demeaning paperwork and hassle over reimbursement from third-parties, and the eyes-on-the-bottom-line-only perspective of too many non-pharmacist supervisors in chain and hospital practice settings.

Perhaps we should take a lesson from the public's trust and reliance in us to build a little of our own self-confidence. Perhaps we need to change our own attitudes about what is important to pharmacy. If we don't believe in ourselves, then being number one with our patients is a hollow, meaningless honor.

Continuing Education

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Advising Consumers on the Proper Use of OTC Antidotes

by Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to:

1. provide information on how pharmacists can aid in the management of acute chemical and drug poisonings; and
2. discuss the advantages and disadvantages, and precautions and warnings associated with emetics and adsorbents, and give advice that should be conveyed to consumers who are interacting with a poisoning victim.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from
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Objectives

At the conclusion of this lesson, participants will be able to:

1. decide what types of questions should be asked about a poisoned victim before treatment is recommended;
2. recognize the precautions and warnings, and adverse effects associated with emetics and adsorbents;
3. cite the limitations of using a salt solution or mechanical stimulation to induce vomiting; and
4. identify information that should be conveyed to persons who are about to administer home treatment to a poisoning victim.

Pharmacists are the most visible and accessible health care professional for most Americans. They are frequently called upon to recommend action in cases of poisoning.

Many steps in the emergency management of poisonings are routine. Oftentimes, no treatment is needed.

This article provides the basic principles on how to manage most cases of poisoning by ingestion or skin contamination. It identifies antidotes and procedures that pharmacists can recommend for home treatment.

Background on Poisoning

Poisoning is a major cause of morbidity and mortality in the U.S. While there are no accurate figures, it is believed that ingestion of poisonous substances is the leading cause of accidental death in children. Approximately 75 percent of poisonings are children under the age of five. Most cases of poisoning can be managed at home.

The patient's status should be addressed before treatment of the poisoning begins. It may be futile and dangerous to remove a chemical from the victim's stomach if he is unconscious, convulsing, or not breathing.

Once the victim is stabilized, the poison should be identified. The quantity and the time of ingestion should be estimated. Then treatment can proceed.

If poisoning is suspected but not confirmed, and if the suspected poison is toxic, general antidotal measures should be initiated. When the quantity of poison is unknown, it should be assumed that it is sufficient to cause serious problems. In many cases, symptoms of poisoning may not appear for several hours to a day following ingestion.

Parents are sometimes reluctant to administer an emetic an hour or so after ingestion because they feel the substance will already have entered the blood and it is too late for the emetic to be effective. But there are documented cases which confirm that 8 to 12 or more hours after ingestion, a victim may successfully vomit a large quantity of poison.

Excess tablets and other solid dosage forms may form a bolus ("concretion") in the stomach. They are not readily dissociated and not readily absorbed. Similarly, activated charcoal may effectively adsorb poisons from the intestine many hours after ingestion.

Dilution of the Poison

Diluting the toxic substance is the first step in treating most poison ingestion. Water is the only liquid that should be used when the identity of the poison is unknown.

The victim should be offered a quantity of liquid that can be swallowed comfortably. Some references recommend 1 to 2 cupfuls of liquid for a child, and 2 to 3 cupfuls for an adult. Excessive fluids may distend the stomach wall and cause premature relaxation of the pyloric sphincter with subsequent emptying of the gastric contents into the duodenum. When this happens, it is difficult to remove the poison before it is absorbed.

Water accomplishes two primary functions. First, it helps reduce gastric irritation caused by some ingested substances. Second, and more importantly, it adds bulk to the stomach to provide a medium to be mixed with the poisonous substance. If the victim has not eaten or drunk fluids the previous hour or so, it is possible that the stomach is relatively empty. This bulk will be needed for effective emesis.

Water is the best diluent for many reasons. Carbonated beverages release carbon dioxide within the stomach to cause distention with possible premature opening of the pyloric sphincter. The gas may also enhance perforation of the gastric wall if the ingested poison is corrosive, or boost the substance into the esophagus where it could induce further corrosive damage.

Milk contains absorbable fats that readily mix with a wide variety of lipid substances. If it is administered when such a poison has been swallowed, the milk can increase absorption of the poison into the body. The resulting toxicity may be more serious. Also, milk delays the onset of emetic action of syrup of ipecac.

When the poison is a corrosive acid or alkali, water or other liquids should *not* be administered at home. Heat released from the resulting exothermic reaction can be devastating to gastrointestinal tissues. A temperature of 80°C is reached within several seconds of adding water to sulfuric acid; 90°C is attained within 90 seconds of adding water to Drano crystals.

Therefore, "neutralization" should not be attempted for acids and alkali. The heat released when acid mixes with alkali (e.g., nearly 100°C within two minutes when acetic acid is added to Drano crystals) may cause irreversible tissue damage. Also, it is not possible to effectively neutralize strongly acidic or alkaline substances with any substance commonly found around the home.

TABLE 1

Conditions In Which Emesis Is Not Appropriate

If Poison Is A:
- Convulsant
- Petroleum or pine distillate
- Corrosive acid or alkali

If Victim:
- Is unconscious or comatose
- Has severe cardiovascular disease
- Is under 6 months of age

Chemical Emetics

Emesis has been a mainstay for eliminating unwanted substances from the stomach. The procedure is accepted because it is quick, thorough, and easily accomplished at home.

There are certain precautions (Table 1) which are valid for all emetics. If the victim is unconscious, there is danger that vomitus may be aspirated into the lungs and cause chemical pneumonitis. If the poison is a convulsant, forced emesis may precipitate seizures. If it is a petroleum or pine distillate derivative, some may enter the lungs and cause chemical pneumonitis. And if the victim has severe cardiovascular disease, forced emesis may place excessive strain on the heart.

Syrup of Ipecac. Syrup of ipecac produces emesis by local and central actions. The first response usually occurs within 20 minutes of ingestion and is due to direct stimulation of the gastric wall. A second phase occurs after 30 minutes and results from direct stimulation of the medullary chemoreceptor trigger zone. If vomiting does not occur within 15 to 30 minutes of administration of ipecac, it should not be assumed that it is ineffective. Vomiting most likely will occur later, initiated through the central mechanism. To be safe, many physicians recommend that a second dose be given 20 to 30 minutes following the first adminstration if vomiting has not yet occurred (Table 2). No more than two doses of syrup of ipecac should be given following an acute toxic ingestion without direct physician monitoring and supervision.

Syrup of ipecac is safe and well tolerated by most persons when used as directed. Its most frequently encountered and potentially serious adverse reaction is on the cardiovascular system. In reports of nearly 7500 persons who received ipecac, no serious systemic toxicity was noted when it was used correctly.

There has been a rash of recent reports of persons with eating disorders, including anorexia nervosa and bullemia, who have become intoxicated with syrup of ipecac. These individuals eat, take ipecac to intentionally induce vomiting, and repeat the cycle perhaps several times each day. Since this exceeds safe dosage, toxicity can be expected.

For most poisonings, syrup of ipecac can be safely given at home, after proper medical advice has been obtained and followed. Much valuable time will be saved if the antidote is readily available, especially in homes with children. Therefore, parents of small children should be strongly urged to keep an ounce of ipecac syrup handy at all times, but out of the reach of children.

Soap Solution. When rapid emesis is indicated and syrup of ipecac is not available, a soap solution is an alternative. Two to three tablespoonfuls of a liquid *dishwashing* soap should be mixed with 6 to 8 ounces of water. These solutions produce emesis by direct stimulation of the

TABLE 2

Syrup of Ipecac and Activated Charcoal Doses and Directions

Antidote*	Directions
Syrup of Ipecac	Children under 1 year: 5-10 ml; Adults & children over 1 year: 15 ml. Take with water. Repeat dose one time if vomiting does not occur in 20-30 minutes.
Activated Charcoal	Children: 15-30 g; adults: 30-100g. Mix slurry.

*The "universal antidote," burnt toast scrapings, and emetics other than syrup of ipecac are not appropriate and may be harmful.

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References
1. *USP DI Update, September/October 1988, p 120.*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774.*

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Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

PV 2098 AMP [091289]

Additional information available to the profession on request.

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gastric wall; thus their action is usually rapid. In one study, the mean time for emesis was less than ten minutes, compared to 15 to 20 minutes with syrup of ipecac. However, the solution is difficult to swallow and less reliable than syrup of ipecac.

Persons being instructed to use soap solution should be cautioned NOT to use laundry detergents, or products intended for use in electric dishwashers. These can be corrosive and potentially dangerous.

Pharyngeal Stimulation. Stimulating the back of the tongue or the pharynx to induce emesis has been recommended. This involves gently stroking the throat area with a blunt object such as a spoon or tongue depressor. Fingers should not be inserted into the mouth since the individual may reflexively bite down.

The advantage of this procedure is that it can be performed quickly. The major disadvantage is lack of effectiveness and a waste of valuable time since gagging is not the same as vomiting. In a study of 30 poisoned children who were gagged, only two vomited and the volume was insignificant (2 ml and 4 ml respectively).

Salt Solution. While some labels on proprietary products, older reference books and first-aid charts still advocate inducing vomiting with a salt solution, this is now considered to be potentially dangerous. Household tablespoon measures vary greatly in size, so an accurate dose is probably not possible to give at home.

The parent of a poisoned child is usually anxious. She may interpret the directions for making a salt solution as ". . .if one tablespoonful of salt is good, then two will be even better." Advice from health professionals has long been to administer ". . .a strong salt solution" rather than recommend a specific quantity. So excessively large, toxic doses of salt have been given.

If emesis does not occur, the sodium chloride will be absorbed. As the plasma sodium level rises, the tonicity of extracellular fluids will increase. Intracellular fluids then move outward to dilute the blood causing shrinkage of cells, eventually resulting in an increased intracranial pressure. All cells of the body are affected, but the first to respond are those within the central nervous system. This combination of shrinking brain cells with their loss of normal function, along with distension of the intracranial vasculature and disturbed metabolic functions of the brain's cells, can lead to severe hemorrhage and thrombosis throughout the brain. Death is then imminent.

Activated Charcoal

An adsorbent is another means to reduce absorption of an ingested poison. Kaolin, Fuller's Earth, bile acid sequestrant resins, and attapulgite are occasionally recommended, but they are not acceptable for general use as antidotes. Unless otherwise indicated, only activated charcoal should be used for adsorption of poisons from the gastrointestinal tract.

Activated charcoal is one of the best substances available for removing unwanted chemicals from the gastrointestinal tract. It is indicated whenever an emetic cannot be used, or following successful induction of emesis with syrup of ipecac.

Activated charcoal will reduce absorption of most poisons. It has little or no effect on others (Table 3).

In the stomach and intestine, poisons diffuse into numerous pores on the charcoal's surface and form tight chemical bonds. The poison is, therefore, not available to the body's absorption sites. This charcoal-chemical complex then passes out of the body with the stools.

Activated charcoal has several important advantages over syrup of ipecac. For example, it is not contraindicated in poisonings caused by any of the substances listed in Table 1. While it is not useful for the chemicals listed in Table 3, it is quite effective for most other commonly encountered poisons.

TABLE 3
Substances Not Adsorbed By Activated Charcoal
Alcohols
Alkali
Boric acid
Cyanide
DDT
Iron salts
Malathion
Mineral acids
Water-insoluble compounds

For maximum effect, activated charcoal should be administered within 30 minutes of ingestion of the poison, but after emesis, if indicated. When used with drugs (e.g., anticholinergics, tricyclic antidepressants, sedatives, etc.) that inhibit gastric emptying, beneficial results have been obtained when it was given 6 to 8 hours following poison ingestion. Following aspirin ingestion, administering activated charcoal 9 to 10 hours later has still produced beneficial results.

The recommended doses of activated charcoal are listed in Table 2. Recent studies indicate that doses of 120 gm may be even more appropriate for adults. Most experts agree that activated charcoal should be given in a ratio of at least 10:1 (charcoal: drug). Excessive doses have not been reported.

Use with an Emetic. Ipecac should be administered first. Activated charcoal should not be given with syrup of ipecac until after the victim has vomited. This is important because emetine and cephaeline, which comprise over 90 percent of the active emetic alkaloids of ipecac, are adsorbed onto activated charcoal, thereby negating their action.

Activated charcoal should be administered as a wetted slurry. Since this is unsightly and unappetizing, it should be administered from a dark container to keep victims from seeing it.

Several commercial products contain a premeasured quantity in a dark, plastic bottle. Water is added to the powder and, following vigorous shaking, the mixture is administered directly from its container. There are also liquid activated charcoal preparations available which have met less resistance from children.

Various flavoring and thickening agents have been recommended to improve the palatability of an activated charcoal slurry. These include gelatin, ice cream and sherbet, jams and jellies, sugar, cocoa and fruit syrups. Caution is advised before any large quantity of such substances is added, since they can adsorb onto the charcoal's surface and reduce its adsorptive activity.

Cathartics

Toxic substances can be removed from the gastrointestinal tract with

KEEP OUT OF REACH

use of a saline cathartic. This movement reduces the contact time between the poison and the body's absorption sites which lowers the potential for toxicity.

However, the evacuant action of saline cathartics may require several hours to complete. Furthermore, adding a saline cathartic to the regimen with activated charcoal has not been shown to be more effective than charcoal alone. Cathartics can be recommended in some poisonings, but usually those persons are under direct physician supervision.

Demulcents

Occasionally, only a demulcent is needed to treat a poisoning. Many plants and chemicals irritate the oral and gastric mucosa, but do not cause serious toxic damage. For these, a scoop of ice cream, a glass of milk, or similar soothing confection will reduce irritation and help the victim feel better.

Beaten egg whites (up to a dozen for an adult) have been given for ingestion of a corrosive acid or alkali. Egg whites serve as a source of protein that will preferentially be denatured by the poison, and in theory, help keep the corrosive away from the gastric mucosa.

Poisonings from Contact with the Skin

Numerous lipid-soluble chemicals can be absorbed through the skin, and within minutes produce systemic symptoms of toxicity. Whenever the skin is contaminated with such items, the poison should be thoroughly flushed with water and washed with soap immediately. All contaminated clothing should be removed. Rubbing the area too briskly should be avoided since this may promote absorption, or cause an abrasion which in turn may increase absorption of the chemical.

Creams, ointments or other topical products should not be placed over the contaminated area if professional assistance will be sought. Occlusive products make decontamination of the area more difficult. The physician may need to remove these before proceeding with treatment.

The eye is especially vulnerable to spilled or splashed chemicals. Substances can be absorbed through the cornea within seconds, causing permanent damage to eye structures with resultant loss of eyesight.

When eye contamination occurs, irrigation with tepid water should be initiated immediately. It should be continued for at least 15 to 20 minutes. Contact lenses should be removed, it present, and the head held directly under a softly flowing stream of water from the tap or from a suitable container. Medicine droppers are inadequate because they do not hold a sufficient quantity. Immediately after irrigation, the patient should be taken to a physician for further care.

Overview

Pharmacists can perform a valuable service in their community by knowing how to manage victims of poisoning. Not all poisonings are serious. But victims need immediate evaluation and possible treatment.

Initial contact with a poisoning victim is often by telephone. It is important to accurately assess the severity before recommending appropriate action. Questions to ask are: 1. name and telephone number of the victim or caller (in case you get disconnected); 2. victim's age, and weight if a child; 3. identity and quantity of the product, and ingredients listed on the label; 4. time elapsed since exposure; 5. symptoms displayed; 6. previous first-aid received if any; and 7. pre-exisiting medical problems of the person and associated therapy.

After the above information has been gathered, appropriate advice for treatment should be given. If the event is serious enough for the victim to require medical assistance in addition to, or in the place of home treatment, this should also be recommended.

If there is any question about the safety of recommending antidotal treatment, a poison control center should be consulted. ●

Continued from page 18

apply for them is before you change jobs. Professionals who start their own business have a tough time getting individual coverage since the amount of coverage you can obtain is based primarily on your current salary, not on what you made in the past. Remember that individual plans, once issued, are completely portable and cannot be modified or cancelled as long as you pay your premium on time.

I own my own pharmacy and already have group and individual disability income protection. What about my overhead costs?

Most insurers that offer disability income protection also offer "disability overhead expense" insurance. As the name implies, this coverage pays your overhead costs (e.g., rent, electricity, etc.) if you become disabled. Benefits are usually payable for a maximum of 2 years so it is less expensive than a comparable disability income plan.

Michael E. Kurowski is a principal with Benefit Concepts New York, Inc., a firm which specializes in the design, implementation and administration of corporate and association benefit programs.

KIMBALL RECEIVES AWARD

The American Pharmaceutical Association (APhA), the national professional society of pharmacists, has announced that Alice E. Kimball, The United States Pharmacopeial Convention, Inc. (USP) Director of Professional Affairs, received the 1990 APhA Friend of the Academy of Students of Pharmacy award.

The award was established in 1989 to recognize those individuals whose long-term sustained services and commitments at the national level have benefitted the APhA Academy of Students of Pharmacy (ASP) and pharmacy students in general. The presentation was made at the ASP Awards Presentation and Reception on Monday, March 12, 1990 at APhA's 137th Annual Meeting and Exhibit in Washington, DC.

Kimball majored in home economics at the University of Maryland. She joined the USP staff immediately after college and has worked in every division of the organization.

Kimball was chosen by the ASP Awards Committee for her contributions to pharmacy students while at USP. She has directed the development and operation of the USP-APhA National Patient Counseling (NPC) Competition since its inception in 1984.

Kimball has coordinated the externship program at USP for nine years. Due to her efforts, four to six pharmacy students from all parts of the country spend extern rotations at USP each year. Furthermore, Kimball organizes an annual student visitation program to USP headquarters for over fifty students as a part of the APhA-NPC summer intern program. She promotes and coordinates the student visits with their pharmaceutical industry sponsor.

As USP Director of Professional Affairs, Kimball directs the patient counseling educational program for pharmacy practitioners that is offered at state association meetings; coordinates member services, including the quarterly newsletter, *The Standard;* organizes local, state, and national meetings; and is responsible for USP's press relations. Kimball has represented USP nationwide as a representative at meetings and conventions, and as a lecturer at colleges of pharmacy and state pharmacy association meetings.

Controversial Resolutions Adopted at USPC Quinquennial Meeting

Reduction in the number of USP tests that require the use of animals; standards and information for vitamins and minerals; international harmonization of compendial standards; *in-vivo* bioavailability requirements; standards for prescription writing; establishment of beyond-use dates for repackaged products; bioequivalence information;—these were some of the subjects of resolutions debated and adopted by the delegates to the USPC Quinquennial Meeting held in Washington, D.C., March 8–10, 1990.

The resolutions were first discussed during a standing-room-only open hearing on Thursday, March 8, directed by the USPC Resolutions Committee chairman, J. Richard Crout, M.D. The hearing attracted many observers from the pharmaceutical industry, in addition to 220+ delegates to the meeting.

International Harmonization

The United States Pharmacopeial Convention is encouraged to explore and implement ways and means for working with the European, British and Japanese pharmacopeias to harmonize standards for drug substances and excipients.

Animal Tests

The United States Pharmacopeial Convention is encouraged to replace, reduce, and refine compendial tests that require the use of animals as rapidly as science and technology permit.

In-vivo Bioavailability Requirements

The United States Pharmacopeial Convention is encouraged to consider in consultation, with the Food and Drug Administration, the feasibility and advisability of establishing, under the USP revision process, human *in-vivo* bioavailability requirements for incorporation into USP.

Veterinary Drugs

The United States Pharmacopeial Convention is encouraged to develop USP standards and information for additional veterinary drugs.

Vitamins, Minerals and Enteral Products

The United States Pharmacopeial Convention is encouraged to expand the USP program for developing public standards and information for practitioners and consumers for vitamins and minerals used as dietary supplements and for enteral products.

Abbreviations

The United States Pharmacopeial Convention is encouraged to develop compendial standards for prescription writing, including, but not limited to, approved abbreviations, block printing instead of script, and metric measures.

"Patient Packs"

The United States Pharmacopeial Convention is encouraged to consider the feasibility and advisability of developing a consensus with medicine, nursing, pharmacy, pharmaceutical manufacturers, and government and consumer groups on a system of Patient Packs to improve efficiency in prescribing, dispensing and patient counseling, and compliance in drug use. The term Patient Packs would include both manufacturer-prepared unit-of-use packages and pharmacist-prepared multiple medication packages.

Pictograms

The United States Pharmacopeial Convention is encouraged to develop standard pictograms for common directions on prescription labels and drug use information materials for patients.

Bioequivalence Information

The United States Pharmacopeial Convention is encouraged to provide additional information and/or more useful presentations on drug product equivalence and/or bioavailability in *USP DI*.

Expansion of USP Membership

The United States Pharmacopeial Convention is encouraged to explore the desirability of expanding the USPC membership by broadening representation from medical specialty groups, dentistry, nursing, other health care professions, the pharmaceutical industry, government and international health organizations.

Beyond Use Dating

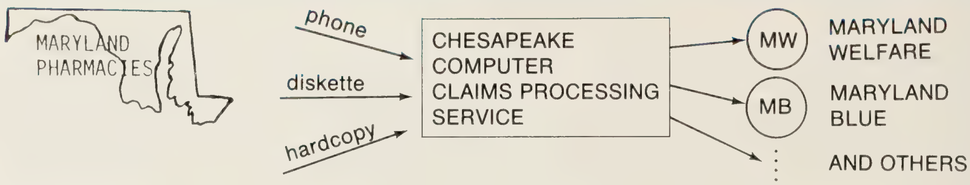
The United States Pharmacopeial Convention is encouraged to explore with the Food and Drug Administration the development of mechanisms by which reliable data and information can be generated to establish scientifically sound beyond use dates for repackaged products.

Solid Dosage Form Identification

The United States Pharmacopeial Convention is encouraged to consider adopting standards for identification of solid oral dosage forms.

Dropper Dosage Measurement

The United States Pharmacopeial Convention is encouraged to consider a policy that droppers on liquid drug products be required to indicate liquid measure.



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Prescription Drugs: An Excellent Value

by Gerald J. Mossinghoff
President
Pharmaceutical Manufacturers Association

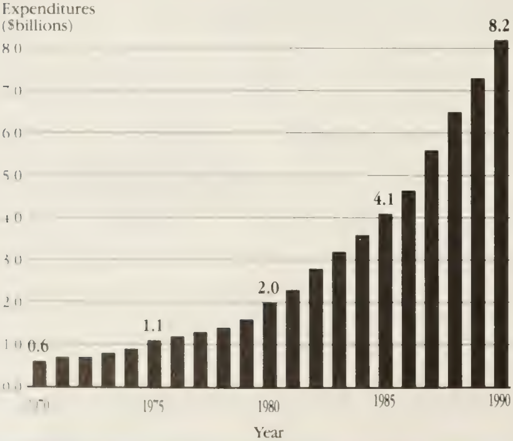
Pharmacists around the country have been expressing increasing concern about the prices they pay for prescription medicines.

You have been asked by your customers to explain price increases. And, in turn, you have every right to ask manufacturers about factors that influence their prices. I would like to outline the unique factors behind the prices of medicines developed by America's pharmaceutical research companies.

Drug prices are driven by the following factors:

- *Industry spending on drug research and development has doubled in the last five years.* Industry's R&D commitment has increased from $4.1 billion in 1985 to an estimated $8.2 billion in 1990. (See Chart A). PMA member companies in 1988, for the first time, outspent the National Institutes of Health on biomedical research. (See Chart B). The rate of increase in R&D spending, in fact, surpasses drug price hikes. (See Chart C). Increasing drug development costs are the result of a trend to "a more knowledge-driven, discovery-by-design approach toward research and development, requiring longer times to commercial payoff and much larger upfront investments," says Henry Grabowski, Ph.D., a Duke University economist. Grabowski also emphasizes the expense of important new biotechnology techniques used to develop safer, more effective drugs.

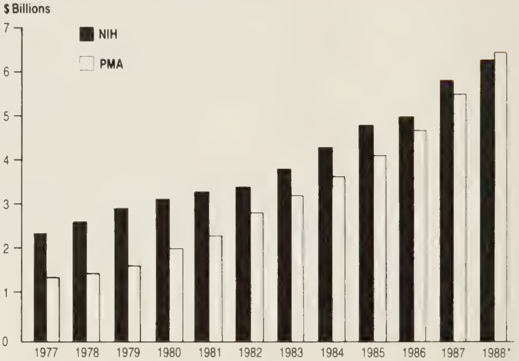
R&D Investments by PMA Member Firms



Source: PMA Annual Survey * Estimated

- *The drug approval process is time-consuming and costly.* The time from initial laboratory studies to marketing approval in the United States is about 12 years, and the average cost of developing a new drug is now well over $125 million, says studies conducted by Texas A&M University economist Steven N. Wiggins.
- *Generic competition has exploded* since passage of the 1984 Drug Price Competition and Patent Term Restoration Act, with the FDA approving more than 2,000 generic drug applications through 1989. Generic competition often cuts deeply into the market for a brand name drug shortly after the patent expires—taking 50 percent or more of the market in two years. This makes funding continuing R&D, and maintaining profitability, increasingly challenging.

R&D Expenditures by NIH and PMA Members



PMA member companies in 1988, for the first time, outspent the National Institutes of Health on biomedical research
The companies' research and development commitment has doubled every five years since 1970

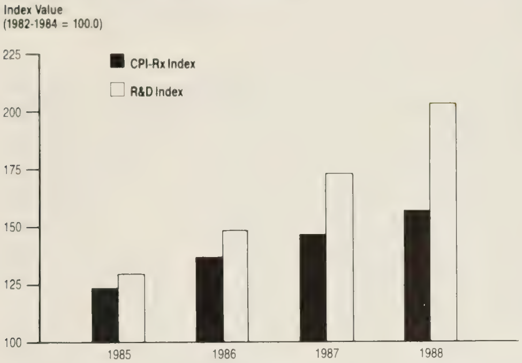
Source National Institutes of Health and PMA Annual Survey *Estimated

These are the driving forces behind drug price increases. All are related to the high price of getting new drugs to the pharmacy.

Despite the increases, it must be noted that the cost of prescription drugs is a declining portion of the nation's overall health care expenditures, with a drop from 12.4 percent in 1965 to 6.8 percent in 1987. (See Chart D).

I think we can also remind customers that new drugs remain a good purchase. The value of today's new quality medicines has been clearly demonstrated:

Increases in R&D vs. Increases in Drug Prices



When comparing the prescription price index to an R&D index with the same starting period, it is clear that research and development spending by the drug industry far outstrips the price index

Source Bureau of Labor Statistics and PMA Annual Survey

- Drugs are cost-effective, and can help patients avoid expensive nursing homes, hospital visits and surgeries.
- Researchers, for example, have concluded that coronary artery bypass surgery in many patients is no more effective than prescription drug treatment in preventing heart attacks and improving survival. And the pharmaceutical therapy is cheaper. While a year of outpatient prescription drug treatment costs a little over $1,000, coronary bypass surgery carries a price tag of well over $30,000.
- From 1976 to 1986, the first H2 antagonist anti-ulcer drug reduced the costs of the disease by $6 billion worldwide and by $4 billion in the United States alone.
- In 1920, the average life expectancy was only 54 years. Today, people can expect to live to be 75, a 40 percent increase. Pioneer drugs of the 20th Century can be given a major share of credit.
- Sixteen drugs are in human clinical trials for Alzheimer's disease. If a cure is found, American society could save up to $80 billion a year.
- AIDS is now a treatable disease. Ten drugs for AIDS and AIDS-related conditions have already been approved.

In recent statements at congressional drug price hearings, Sen. David Pryor, D-Ark., chairman of the Senate Special Committee on Aging, took the drug industry to task for producing a preponderance of "me-too" drugs that he says are too costly.

We feel the Senator's committee staff overlooked some important points:

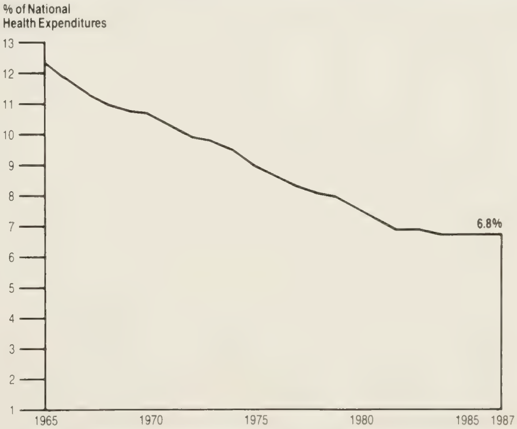
- New Molecular Entities—which account for about 80 percent of all industry research and development—are the most accurate reflection of corporate innovation. Senator Pryor's Aging Committee staffers diluted industry achievements in one of their reports by also counting hundreds of minor improvements to existing medicines as "new drugs."
- About half of the 182 NMEs approved by the Food and Drug Administration between 1981 and 1988 were assigned the agency's highest "A" or "B" ratings.
- Drugs that don't have the highest FDA ratings—those that are "C-rated"—often provide key improvements in delivery methods and side effect profiles that are important to many patients. Many of your best sellers today were "C-rated" by FDA.
- Medical innovation generally occurs gradually, with a steady flow of modest improvements that eventually lead to big improvements.

We should all be proud of the achievements of our nation's drug industry. Over the last 50 years, the new medicines sold by pharmacies around the country have been an important feature of the successful fight against a number of serious illnesses.

Steady development of new vaccines and medicines has virtually eradicated some ailments such as polio and tuberculosis, and new products, additionally, have helped to reduce the need for surgery, physician visits and hospitalization.

Innovative drug companies, working hand-in-hand with pharmacists, have an impressive tradition. And it's one we intend to keep as we head into the 21st Century. Together, we will continue to develop and provide cost-effective quality medicines.

Drugs (and Other Nondurable Medical Products) as a Percentage of National Health Care Expenditures



The cost of prescription pharmaceuticals is a declining portion of the nation's health care expenditures, with a drop from 12 4 percent in 1965 to 6 8 percent in 1987

Source Health Care Financing Administration

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The 1990 MPhA Salary and Benefits Survey

Lisa Langer
MPhA PEP Student

A survey of the MPhA membership on pharmacists' salaries and benefits was mailed to 956 members. Of this total, 241 responses were received by the February 16, 1990 deadline, representing a 25.2 percent response rate.

In compiling the responses to the 1990 MPhA Survey of Pharmacist Salary and Benefits, the results have been correlated by type of practice, position, and sex. Also included is a comparison of salaries based on age.

The overall average salary for male pharmacists was 22% higher than for females; however, a great deal of this difference is related to the significantly higher response rate from male owners and their higher average salary.

Provided benefits varied more by work site than by job position. A lack of scheduled lunch breaks was the most frequent complaint noted by chain and independent staff pharmacists. The benefits reported by owners may be of little value because some owners reported the benefits they receive from their pharmacy while others reported the benefits they gave to their employees.

TABLE 1
Compilation of Salary/Benefits Provided to Pharmacists

MALES

	Chain		Independent			Hospital						
	Manager	Staff	Owner	Manager	Staff	Director	Staff	Education	LTC	HMO	HHC	Other
Overtime	53%	68%	2%	36%	15%	38%	60%	0%	11%	0%	0%	11%
Bonuses	90%	64%	32%	85%	62%	25%	80%	50%	55%	14%	100%	33%
Profit Sharing	41%	32%	30%	21%	15%	13%	40%	0%	33%	14%	0%	22%
Paid Vacation	97%	88%	75%	86%	92%	88%	100%	100%	100%	86%	100%	100%
Sick Days	84%	88%	58%	71%	54%	88%	100%	50%	78%	86%	100%	100%
Personal Leave	41%	36%	47%	50%	0%	88%	60%	0%	56%	29%	50%	44%
Health Ins.	97%	88%	77%	86%	92%	88%	100%	100%	56%	86%	100%	78%
Life Insurance	90%	80%	61%	43%	23%	88%	80%	0%	67%	86%	100%	56%
Disability Ins.	81%	60%	75%	50%	23%	88%	60%	0%	56%	57%	100%	67%
Pension Program	78%	64%	32%	14%	15%	100%	80%	50%	33%	57%	50%	78%
401K or IRA	84%	52%	12%	0%	8%	50%	40%	0%	44%	43%	0%	33%
CE Programs	84%	72%	60%	36%	15%	100%	80%	50%	67%	43%	50%	22%
Memberships	50%	40%	65%	29%	15%	50%	0%	50%	78%	71%	100%	22%
Purchase Disc.	44%	56%	74%	79%	92%	63%	40%	50%	89%	43%	0%	11%
Rx Insurance	50%	44%	35%	14%	15%	75%	0%	0%	33%	43%	100%	22%
Lunch/breaks	25%	16%	18%	14%	31%	88%	80%	0%	67%	57%	100%	78%
Average Salary	53,956	43,609	57,921	52,436	41,618	50,375	42,965	55,000	51,111	53,000	46,500	49,420
# Responding	32	25	57	14	13	8	5	2	9	7	2	9
% of Total	17.5%	14.7%	31.1%	7.6%	7.1%	4.4%	2.7%	1.1%	4.9%	3.8%	1.1%	4.9

Salary and benefit breakdown by practice type and sex is shown in Table 1. Not surprisingly, independent owners had the highest average salary for males ($57,921) and also were the largest number of survey respondents (57). The average salary of staff pharmacists in chains and independents was about the same for both male and females. The biggest difference was in management level positions. Males averaged over $5,000 more than females in chain settings and over $7,500 more in independent settings. Male hospital managers also averaged over $5,000 more than their female counterparts.

The average salary by age, shown in Table 2, is fairly consistent among females. For males, however, the salary ranges up and down throughout the age categories so no real conclusion can be drawn. It is interesting to note though that males approaching retirement age have salaries about equal to new graduates.

Table 3 deals with how pharmacists feel about their jobs and the profession in general. Pharmacists reported that of all areas, opportunities for job advance-

TABLE 1 (Continued)
Compilation of Salary/Benefits Provided to Pharmacists

	FEMALES												
	Chain		Independent			Hospital							
	Manager	Staff	Owner	Manager	Staff	Director	Staff	Education	LTC	HMO	HHC	Other
Overtime	65%	78%	0%	0%	12%	50%	57%	0%	100%	25%	0%	0%
Bonuses	71%	78%	50%	75%	38%	50%	43%	0%	100%	50%	100%	0%
Profit Sharing	43%	33%	0%	25%	0%	25%	0%	0%	100%	0%	0%	0%
Paid Vacation	93%	100%	0%	100%	100%	100%	86%	100%	100%	100%	100%	0%
Sick Days	65%	78%	0%	100%	75%	100%	86%	100%	100%	100%	100%	0%
Personal Leave	57%	56%	0%	25%	38%	100%	100%	100%	100%	50%	50%	0%
Health Ins.	65%	100%	0%	75%	75%	100%	100%	100%	100%	100%	100%	0%
Life Insurance	71%	89%	0%	50%	63%	100%	71%	33%	100%	100%	100%	0%
Disability Ins.	65%	67%	0%	0%	50%	75%	71%	33%	100%	100%	50%	0%
Pension Program	50%	56%	0%	50%	25%	100%	43%	67%	100%	25%	50%	0%
401K or IRA	65%	67%	0%	50%	38%	50%	57%	0%	0%	50%	50%	0%
CE Programs	71%	78%	0%	50%	38%	100%	57%	33%	100%	75%	100%	0%
Memberships	21%	22%	0%	25%	12%	50%	0%	33%	100%	50%	50%	0%
Purchase Disc.	50%	78%	50%	100%	75%	75%	14%	0%	0%	0%	50%	0%
Rx Insurance	29%	45%	0%	50%	25%	75%	71%	100%	100%	75%	0%	0%
Lunch/breaks	0%	0%	0%	25%	12%	100%	100%	100%	100%	75%	50%	0%
Average Salary	53,956	43,360	13,000	44,805	42,194	45,935	37,184	48,000	47,500	44,125	43,520	0
# Responding	32	9	2	4	8	4	7	3	1	4	2	0
% of Total	24.1%	15.5%	3.4%	6.9%	13.8%	6.9%	12%	5.1%	1.7%	6.8%	3.4%	0.0

TABLE 2
Average Salary by Age and Sex

MALES

Age	Average Salary	Number	% of Total
21–25	$44,000	9	4.99
26–30	$49,120	18	9.89
31–35	$55,511	26	14.2
36–40	$49,071	25	13.7
41–45	$59,512	27	14.8
46–50	$52,808	25	13.7
51–55	$58,965	18	9.8
56–60	$58,500	19	10.3
61–65	$46,857	12	6.6
66–70	$41,500	4	2.2

Average Salary: $54,185
Total Number: 183

FEMALES

Age	Average Salary	Number	% of Total
21–25	$41,180	5	8.7
26–30	$41,354	23	40.0
31–35	$43,789	16	27.5
36–40	$45,460	5	8.6
41–45	$40,955	6	10.3
46–50	$40,910	2	3.4
51–55	$ 0	0	0.0
56–60	$40,000	1	1.7
61–65	$ 0	0	0.0
66–70	$ 0	0	0.0

Average Salary: $42,238
Total Number: 58

ment were generally poor (15%) or fair (22%). Overall pharmacists seemed satisfied with their job. Besides the mentions of insufficient breaktime and the need for uninterrupted lunches, the single most cited problem facing pharmacy and causing dissatisfaction was third-party programs.

Author's Comment: A special note of thanks to the pharmacist who wished me luck on his survey, it came in handy while I was sifting through 241 surveys!

Lisa Langer is a third-year student at the University of Maryland School of Pharmacy. She was a PEP student with the Maryland Pharmacists Association during February 1990.

TABLE 3
Pharmacist Opinions About Employment and Pharmacy

	Excellent	Good	Fair	Poor
Physical Working Conditions	22%	59%	15%	4%
Employee/Supervisor Relations	44%	41%	15%	7%
Employee/Employer Relations	29%	59%	8%	5%
Work Atmosphere (morale)	26%	56%	7%	4%
Practice Site Location	45%	49%	4%	2%
Overall Job Satisfaction	25%	48%	15%	12%
Opportunities for Advancement	18%	45%	22%	15%
Future Outlook on Position	33%	37%	24%	6%
Future Outlook on Profession	32%	33%	30%	5%

Disability Income: Have You Insured Your Most Important Asset?

Most people own a variety of insurance plans during their lifetime—homeowner's insurance to protect their house, auto insurance to protect their car, as well as medical and life insurance to protect them and their families in the event of a catastrophe. However, comparatively few people get coverage to protect what may be their important asset—their ability to earn an income. When you consider that most individuals' earnings potential over a working career easily exceeds $1 million (e.g., 40 years × $25,000 per year), long-term disability insurance to protect that income stream is arguably the most valuable coverage an individual will ever own.

This article will examine the various types of long-term disability insurance available, offer tips on selecting the most appropriate coverage, and provide answers to some frequently-asked questions.

Sources of long-term disability income

Income during a period of disability can come from a variety of sources. Your employer may provide "sick pay" and possibly some longer-term benefits. Worker's compensation provides benefits for disabilities if they are *work-related*. Social Security provides a limited benefit for *total* disabilities that are expected to last for at least a year or result in death. Any other disability income will generally come from two sources:

1. Group long-term disability coverage (sponsored by a company or a professional association)
2. Individual long-term disability coverage (sometimes sponsored by a company or professional association; often purchased by individuals, especially self-employed professionals).

Group vs. individual disability coverage

All disability plans are *not* created equal. In general, group plans offer the convenience of no required physical exams and low premiums, but often contain many exclusions and limitations. Individual plans usually require a physical exam and are more expensive, but provide more comprehensive benefits that can be tailored to fit individual needs. Here are some other differences:

1. *Contract and rate guarantees*—Group coverage can be revoked or the premiums increased if the group has a bad experience (this happens often with group medical). However, individual plans are usually *non-cancellable* and *guaranteed renewable* which means the plans cannot be modified or cancelled for any reason (except for non-payment of premiums) and premiums can never be increased.
2. *Definition of disability*—Individual plans generally pay a benefit as long as you cannot work in your regular job even if you can and do work in some other occupation. Group plans may limit this "own occupation" protection to 2 or 5 years.
3. *Partial disability benefits*—Many professionals never become totally disabled, or are only totally disabled for a short period of time. Individual plans will often pay a proportional benefit for a partial disability, even if you never become totally disabled. Most group plans do not offer this benefit, or require that you be totally disabled for at least 30 days before you can collect.
4. *Offsets*—Group benefits are typically offset by Social Security payments whereas individual plans pay benefits *in addition* to what you receive from Social Security.
5. *Portability*—Group benefits terminate if you leave the company or the association that sponsors the plan. Individual plans are completely portable if you leave your company, your association, or even your profession. This feature is important if you have medical problems when you leave your company or association and need to get coverage.
6. *Other features*—Group plans offer limited flexibility to customize your benefits. Individual plans offer a variety of options:
   - *Waiting period*—You determine whether benefits start after 30, 60, 90, 180 or 365 days of disability. The longer the waiting period, the lower the premium.
   - *Benefit limits*—You determine how much of a benefit you want. Typically, you

can get a benefit up to 60–70% of your income as long as you don't have any other disability benefits.

- *Benefit periods*—You can design your plan to pay disability benefits for as long as 1 year, 2 years, 5 years, to age 65, even for life. The longer the maximum benefit period, the higher the premium.
- *Inflation protection*—You can add a feature which will index your benefit to the cost-of-living if your disability lasts for more than one year. Important if you are young and become disabled for a long time.
- *Guarantee of future insurability*—Many individual plans offer a feature so you can increase your benefit in the future without having to take a physical.
- *Non-disabling injury benefit*—A few plans offer *tax-free* reimbursement for accident-related medical expenses. Particularly useful if your medical plan has a high deductible.

How to select appropriate disability coverage

1. *Determine how much coverage you need.* Most insurance companies will let you buy a benefit up to 60–70% of your earnings (you don't need more than that since benefits are *tax-free* if you pay the premium with *after-tax* dollars). If you are the "breadwinner" in your family or need every penny of your income, you should probably get as much protection as you can.
2. *Determine what features are important to you.*
   - How long of a "waiting period" do you want before benefits begin (30, 60, 90, 180 days)?
   - How long a benefit period do you need (5 years, to age 65, lifetime)?
   - Do you want inflation protection?
   - Do you want to still collect benefits if you can't work as a pharmacist but can do other work (i.e., "own occupation" protection)?
   - Do you want to be eligible for benefits even if you are not totally disabled (partial/residual benefit)?
   - Do you anticipate buying more coverage in the future (guarantee of future insurability option)?
   - Do you want coverage that is portable?

   Your answers will often depend on how much you value the coverage, your level of personal savings, and your age. Features like lifetime benefits, cost of living protection, and guarantee of future insurability are generally more important if you are young and have limited savings. Plans with a longer waiting period (e.g., 180 days) and a shorter benefit period (e.g., 5 years) may make more sense if you're older and more well-established.
3. *Determine your budget and shop around.* Disability benefits can cost you anywhere from a few hundred to a few thousand dollars a year. So, figure out what you can afford to spend and determine what combination of group and individual coverage meets your needs. Be sure to shop around for your individual (vs. group) protection since prices can vary greatly depending on the features you select.
4. *Select a good insurance company.* Ideally, you want a financially sound insurance company that is committed to the disability marketplace and has good products. A financially strong insurer will have an A+ rating from A. M. Best Company and at least an AA rating for claims-paying ability from Standard & Poors' (AAA is their highest rating). Your agent or broker can provide you with these ratings. Among the insurers who are financially strong and offer excellent individual disability plans are Provident Life & Accident, Paul Revere, Northwestern Mutual, UNUM and Monarch.
5. *Select a good agent.* Not all knowledgeable life insurance agents are as knowledgeable about disability benefits. Make sure your agent has experience with disability plans and represents an insurer that is financially strong and offers good plans. A good agent who can help you plan, explain your range of options, and offer competitive products is invaluable.

Answers to some frequently-asked questions

I just graduated from pharmacy school and can't afford to pay much for coverage. What type of plan makes sense for me?

If your budget is tight, a group plan from your employer or association may be the only coverage you can afford. However, many insurers that offer good individual plans also offer "step-rate" and "annually increasing" premium plans to people under age 40. Premiums are less expensive initially and more expensive over the long-term, but the quality of coverage is excellent. The plans can be converted to a level premium plan at a later date if you wish.

I currently work for a large drug company but am thinking of going to work for a small pharmacy that doesn't offer any benefits and initially won't pay me much salary? What should I do?

You won't be able to take your group benefits with you. If you want any individual coverage, the time to

Concluded on page 8

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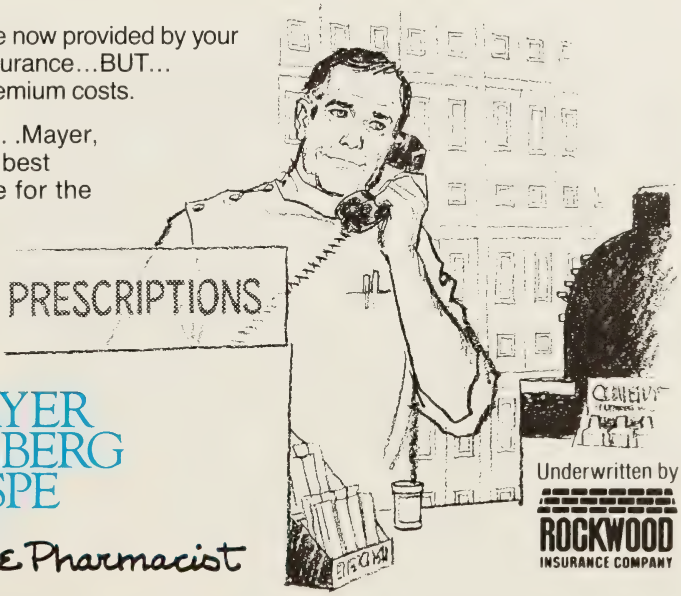

HMO Formularies—Their Impact on Community Pharmacy

Penney K. Garrett, P.D.

The popularity of health maintenance organizations (HMOs) has increased over the past few years. This is in part due to the soaring costs of traditional medical insurance premiums. HMOs, more than any other entity in the ambulatory health-care field, have the ability to contain costs by implementing many mechanisms that traditionally have been available only to inpatient institutions. Many of these strategies may seem foreign to the community pharmacy but are becoming more common as HMOs strive to develop ways to manage prescription drug benefit programs. These mechanisms include substitution policies, co-payments and cost sharing, step-care protocols, and drug formularies.

Community pharmacies are already using formularies without even being aware of them. Most HMOs use a modified form of an open formulary—the HMO prescriber may write for any available and covered prescription; however, all generally available products must be substituted by the pharmacist. More structured formularies, those that cover only a certain drug within a therapeutic class or cover only a specific brand name, are designed to assist plan prescribers in making cost-effective choices for therapies. Structured formularies place the prescriber at risk for excessive drug expenses, a necessity that any managed care plan must use to control costs. In addition, a formulary is a tool that HMOs can use to measure physician performance and compliance.

It is rare that any type of formulary is implemented without cost containment in mind. But, HMO pharmacy and therapeutics committees are also concerned that the HMO members receive quality medications. Selection of drug products for a formulary usually involves consideration of the "uniqueness" of the drug compared with other similar products, the therapeutic indication for the drugs, and the price of the product. A good formulary is flexible enough to provide the physician with concrete guidelines for managing the quality of therapy without compromising optimal patient care.

A formulary does not affect the reimbursement or the purchasing power of the provider pharmacy. Rather it creates a situation where overall drug costs are lowered at the HMO level, resulting in decreased pressure at the pharmacy level to control costs. In many cases, the use of a formulary has enabled HMOs to increase pharmacy dispensing fees.

Key players involved in formulary development include the HMO, drug manufacturers, pharmacists and physicians. The formulary can be a positive experience for everyone:

- The HMO has better control over rising drug prices.
- The manufacturer increases its product's market share.
- Physicians risk under capitation is lowered.
- Pharmacists are no longer the sole focus of efforts to control drug benefit costs.

A common complaint of provider pharmacies is that they cannot see an instant benefit from adhering to a formulary. Some pharmacies may resent the HMO's rules and regulations and pass their dissatisfaction onto the HMO's customers. This only leads to strained relations between the HMO and its members and betwen the HMO and its provider pharmacies. This is unfortunate since most HMOs view the pharmacy provider as an extension of itself and its managed care philosophies. Therefore, it is important for pharmacies evaluating HMO contracts to consider more than just the financial aspects of the relationship. Since each HMO is different, the pharmacy must take time to become familiar with that HMO's variations, assess how those variations meet with the pharmacy's practice perspective, and *then* decide whether to become a pharmacy provider. The pharmacy relations department of each HMO is available to answer questions from providers at all times and should be used as a resource before and throughout the HMO-pharmacy relationship.

Formularies are a proven cost-containment program and are going to become increasingly more common in the managed care marketplace. The cooperation of pharmacists will eventually enable HMOs to pass some of the cost savings on to pharmacies—the HMO's partner in health care.

Penney Garrett is Clinical Pharmacist/Drug Formulary Educator for the FreeState Health Plan, Inc. based in Cockeysville, Maryland. She is a graduate of Drake University College of Pharmacy.

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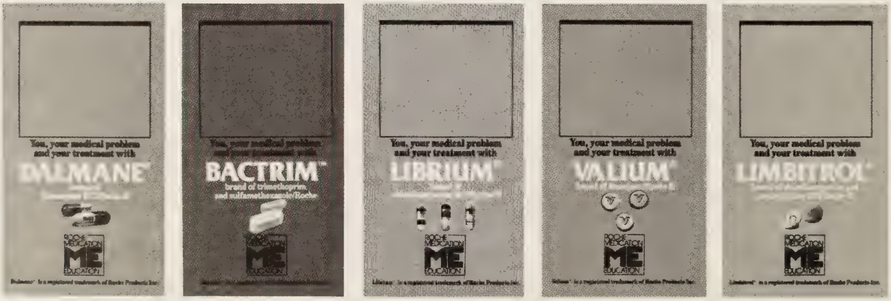
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Counseling Your Allergy Patients

When allergy sufferers with stuffy noses and watery eyes come through your door, the temptation may be to view their condition as more of an annoyance than an illness.

Allergy sufferers themselves sometimes make this same mistake. But the fact of the matter is that allergies are serious conditions which can rob people of their health and productivity.

Allergy Sufferers Need Your Help

People with upper respiratory allergies are miserable enough to miss three million work days a year in the U.S., and to spend more than a half a billion dollars annually on treatments in an often frustrating search for relief.

Many of the medications contain powerful active ingredients with a myriad of systemic effects. But many patients mistakenly view them as benign for two reasons: many allergy medications are available without prescription, and sufferers have been treating themselves with these products for years.

Even worse, an estimated one-and-a-half million Americans avoid medication entirely because of the side effects these medications can cause. Your advice can help ensure that patients receive the safe, effective treatment they need.

Concerns to Discuss With Allergy Sufferers

Here are some of the areas in which allergy sufferers may need counseling:

- Non-prescription Doesn't Mean Harmless: READ AND HEED THE PACKAGE LABEL, ESPECIALLY WARNINGS!

Antihistamines are the most common medications used by people with allergies. Most antihistamines are available over-the-counter (OTC), yet can induce an array of unwanted side effects.

Antihistamines that do not cause drowsiness and other common side effects are available by prescription, although it is anticipated that Seldane (terfenadine, Marion Merrell Dow Pharmaceuticals), the most successful of these, will be available OTC within two years.

Be cautious about current non-prescription medications that say they are non-sedating. These products do not contain an antihistamine, only a decongestant. They only relieve congestion and can cause excitation, irritability and insomnia.

The following are some of the side effects you may wish to discuss with patients. They can apply to non-prescription and older prescription allergy medications:

—*Drowsiness*
Most patients know that antihistamines can make them drowsy but don't realize they can reduce reaction time and can impair judgement. For instance, one common OTC medication, Benadryl, contains the same active ingredient (diphenhydramine) found in sleeping pills. In fact, the dosage of diphenhydramine in Benadryl is identical to the dosage in sleeping pills such as Nytol and Sominex.

—*Non-sedating Doesn't Mean Lack of Side Effects*
Some non-prescription medications claim in their advertising to be non-sedating but fail to adequately inform consumers of possible excitation and insomnia side effects as well as the fact that they don't contain an antihistamine and therefore provide only limited symptom relief.

There is no clinical proof that antihistamine/decongestant combination products avoid side effects by including ingredients that cause opposite reactions. These medications can cause any combination of these side effects.

—*Driving Impairment*
Patients need to be reminded that taking traditional allergy medications can significantly impair driving skills. In fact, studies have shown this to be the case even when the people subjectively felt unaffected.

Most people are aware that drowsiness impacts on driving performance. However, traditional allergy medications can also dramatically impair cognitive functioning and significantly slow down a driver's reaction time by as much as 25 percent.

The driving impairment issue is so significant that California recently enacted legislation restricting driving while under the influence of certain OTC medications. New York may be introducing similar legislation.

According to an article in the October 16, 1989 issue of *U.S. News & World Report*, the National Highway Traffic Safety Administration, concerned about the growing number of people who take legal and illegal drugs and drive, has begun training police officers to look for physical cues indicating that a person may be impaired by OTC medications. The result could be that someone who has taken an allergy medication could be fined, jailed or lose his or her driver's license.

It's vital that you advise your patients to take the package warning "don't drive or operate heavy machinery while taking medication" *seriously*. It is not enough for patients simply to stay awake and try to stay alert since these medications can significantly reduce reaction time which may result in accidents.

—*Additional Side Effects*
Patients are often unaware of other possible central nervous system side effects of allergy medications. You should make them aware of these so that if they do occur, patients will know they may be caused by the medication.

- Impaired Motor Coordination
- Impaired judgement
- Dizziness
- Disorientation
- Confusion
- Restlessness
- Nervousness
- Inability to Sleep

- Counseling on Drug Interactions

As with many other types of medications, if patients drink alcohol while taking many OTC allergy medications it can be dangerous. It's important for you, the pharmacist, to alert patients about potentially dangerous combinations.

Physicians are often unaware of what non-prescription medications patients take. You can fill an important role by informing patients about possible interactions.

There are many ways in which you can fill a gap in the treatment of allergy sufferers. And remember, although you may see more alergy patients in the traditional spring and fall allergy seasons, many people suffer allergies year-round. Those allergic to animal dander, dust mites and mold could need your help throughout the year.

Investing in the Pharmaceutical Industry: Opportunities in Europe?

by R. Bruce Kramer

Throughout my years of advising clients on how to invest, I have always held that when stock investing is appropriate one should begin by staying within his/her own industry. The following perspective is intended for those of you seriously considering capitalizing on the events unfolding in Europe and how the pharmaceutical industry should fare.

During the next three and a half years, Europe will continue the evolutionary process of becoming the world's largest single marketplace, surpassing both the United States and Japan. December 31, 1992 is the target date chosen for removal of most internal trade restrictions among twelve European nations—Belgium, France, West Germany, Luxembourg, Italy, The Netherlands, Portugal, Spain, Greece, Ireland, Denmark, and the United Kingdom. That means that 320 million consumers—compared with 240 million in the United States and 120 million in Japan—will be able to trade freely, without different technical and regulatory standards, border controls, and excise taxes. As European corporations prepare to meet the new challenge, prices for shares of companies that are well situated in the new environment should benefit.

To date, the implications of a single market for the pharmaceuticals industry are difficult to judge, although general expectations are that too little time is left to permit a unified market to become a reality by 1992. In general, local governments control most European markets for drugs by means of price-control mechanisms, although some countries might claim the contrary. As a whole, the size of the European healthcare market exceeds that of the United States and of Japan, but per capita is less. In addition, growth of the market in monetary terms has been slower because of government funding for a high proportion of healthcare programs and close control of pricing.

At present, each country has its own standards, based on local traditions and medical practice, for approving and licensing medicines. National regulatory authorities have had difficulty coping with current workloads, and neither the EC nor individual members has provided increased funding to cope with major legislative and bureaucratic changes.

Patent legislation, manufacturing standards, a process for approval of new drugs, and changes in pricing mechanisms all present major obstacles to the creation of a single market. In 1976, the European Commission set out certain directives whereby, after a product had been approved for marketing in one member state, other countries could recognize the first country's assessment and issue their own national marketing authorization. Such mutual recognition has not worked well. To date, no license granted in one EC country has been unequivocally recognized in another.

A single European market is inevitable, although the degree of unity will depend on the enthusiasm of the individual member countries. Many industries are already in the process of integrating principles set forth in the 1986 Single European Act.

Whatever the final outcome on December 31, 1992, Europe is actively undergoing change today to prepare for this major event. Based on the size of the market alone, the implications are enormous, and potential consequences for European businesses are equally profound.

Mr. Kramer is an Assistant Vice President and Financial Consultant with the Bloomfield Hills, Michigan office of Merrill Lynch, Pierce, Fenner & Smith, Inc. (800) 937-0904.

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3. ARE YOUR HEALTH AND BEAUTY AIDS PRICES COMPETITIVE?
4. IF SO, ARE YOU TELLING YOUR CUSTOMERS?
5. HAS INCREASED THIRD PARTY PRESCRIPTIONS AND COMPETITION AFFECTED YOUR PRESCRIPTION DEPARTMENT PROFIT?
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Commentary

Dickinson's Pharmacy

by Jim Dickinson

The real PCS story. There may be a lot of things wrong in pharmacy these days, but after the past month, nobody can say there's anything wrong with pharmacy's rumor mill or its imagination. Both have been working overtime to create a lively view of tomorrow out of developments inside PCS-McKesson. Now it's time for some plain facts.

California Pharmacists Association executive vice president Robert C. Johnson—the most able pharmacy leader of our time—has gone to McKesson Drug Company to be CEO of its Pharmaceutical Card System (PCS) subsidiary next month, following the successful acquisition by McKesson of the 14% of PCS stock that it did not previously own.

Apart from the fact that Johnson has some exciting ideas for PCS after he takes over, among which will be the hiring from CPhA of Robert Abrams, the founder of Paid Prescriptions before it fell into hostile hands, you can disregard all other rumors.

Specifically, do not believe that CPhA's PSAO, the Pharmaceutical Care Network, or its CEO, John Skhal, are going to PCS. There are no plans for that.

Similarly, do not believe that NARD's national PSAO, RxNet, will go to PCS. Neither will NARD executive vice president Charles M. West, NACDS president Ronald L. Ziegler, or APhA executive vice president John A. Gans become members of the PCS board (PCS won't have a board now that McKesson has 100% of its stock).

And don't believe that there are any antitrust implications in Johnson and Abrams going to PCS. Those sorts of executive recruitments go on every day in American business.

The rumors got under way because of the old-fashioned, unsurprising, routine oil-and-water mix of big-business corporate secrecy during stock manipulations and strategic planning on one hand, with the pharmacy market place's normal hyper-excitement over any ideas that might affect daily business on the other. The most exciting rumor, for example, had it that Johnson, Abrams and Skhal would go to PCS in a mega-deal with West, Gans and Ziegler that would fold PCN and RxNet into PCS-McKesson and create the most powerful pharmacy marketing force in the history of the universe.

Johnson, West and Gans subconsciously may have let that particular rumor run a while by failing to publicly ridicule it, upfront. Why should they spoil everybody's fun?

It was a delightful fantasy, and for as long as pharmacy leaders toyed (as they did) with the idea that they might buy the 14% of PCS stock that McKesson was trying to buy, and even lean on McKesson to sell them the rest, it was harmless fun. But the idea of pharmacy buying PCS was never practical. The market value of the stock was $150 million, certain to rise higher if a serious buy-out was tried—and a controlling interest at half that amount would still be far beyond the reach of the combined funds that could be scratched together by every organization in pharmacy.

McKesson did think about it. So did Johnson, Gans, West and Ziegler. But as soon as they did think about it, they saw it for what it was—pure fantasy.

Which brings us back to the comparatively "dull" reality of Johnson's momentous decision. It's a little bit less than the most powerful pharmacy force in the history of the universe, but it's still pretty exciting. At 54, Johnson has been CPhA's head honcho since 1969, and in that time he unified three California pharmacy organizations who were at each others' throats a lot of the time. Today, his creation—CPhA—is the strongest and largest state pharmacy organization in the nation with, in Johnson's words, "incredible influence in the state Capitol and nationally."

Its PSAO, likewise, is among the most effective in the nation. And last summer's collaborative CPhA-hospital pharmacy action statement on the future of pharmacy is the best document on that subject pharmacy has produced anywhere.

None of those accomplishments would have come about without the genius of the man himself, however. Fully the equal of the legendary William S. Apple without the bombast that drew so many enemies to the latter, Johnson was unfairly denied leadership of the American Pharmaceutical Association on each of the two runs he made for it.

APhA's kingmakers were so afraid of the discord that they feared "another Apple" could bring that they simply could not let themselves look closely enough at Johnson to put their fears to rest. In his 20 years at CPhA, Johnson has been the antithesis of Apple in the discord department—a veritable harmony-maker as he went about the building of pharmacy power bases on an Apple scale. That unique genius for constructing workable political coalitions that actually build things—as opposed to impressing the voters—will now face its biggest challenge of all at PCS.

There, Johnson must convince the hard-headed, pharmacy-ignorant, bottom-line barons of corporate America that the prescription drugs in their employee and retiree benefits aren't widgets—that they are, instead, the keys to effective cost-containment rather than mere targets for infinite discounts.

Johnson wants to show all the uneducated and the doubters that a better kind of drug utilization review by pharmacists using individual patient profiles is cost-effective and properly part of pharmacy services that should be appropriately reimbursed. At PCS he will have an unparalleled opportunity to do that.

We wish him the best, for pharmacy and most of all for himself. He deserves it.

This feature is presented on a grant from "Dickinson's Pharmacy—The Independent Voice," an 8-page practical monthly newsletter available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45.

What's Your Plan? A Time for Retirement Plan Sponsors to Reflect

by

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Baltimore, MD 21202

Once again, Congress has mandated that all qualified retirement plans be amended. Every qualified retirement plan in the country must be amended for plan year 1989 in order to conform to the Tax Reform Act of 1986. Since changes are required, now is the time to review your plan in light of the three elements that constitute a successful retirement program: design, administration and investments.

Plan Design Alternatives

If your personal or business financial situation has changed or if your retirement goals are different, you may wish to make additional amendments to your plan or even change the type of plan you have.

Individually drafted plans can cost anywhere from $1,200 to $3,000. Or you can choose a prototype retirement plan which can provide you with just as much flexibility.

Many tax professionals are already turning to prototype retirement plans as a practical alternative to individually designed plans. And the I.R.S. has provided further impetus by charging up to $450 to review individually designed plans.

The second element of a successful retirement plan is that of plan administration. Many administrative "packages" are available. But a good administrator will offer a variety of custom-designed services and will be fully knowledgeable concerning current tax laws to keep your plan in compliance. However, plan administration is never "free." Be sure to look for hidden charges when reviewing your plan administration.

Maintain Investment Flexibility

The last element is your plan investments. Your retirement plan should offer the widest range of investment opportunities. A good prototype retirement plan will provide you with this flexibility. Be sure that the prototype that you choose doesn't lock you into any particular investments and that you have the ability to move your assets from one institution to another without penalty.

In summary, *you must amend your plan by the end of your plan year 1989* (even if you plan on terminating it this year). You should begin this process as soon as possible to avoid making last minute decisions or failing to amend your plan in a timely fashion. Consider using a prototype retirement plan which offers you an excellent opportunity to protect yourself from the confusion and expense of tax law changes. At the same time, a prototype retirement plan preserves the flexibility that is essential to a sound investment program. And review your plan administration options to ensure that your plan is operated properly.

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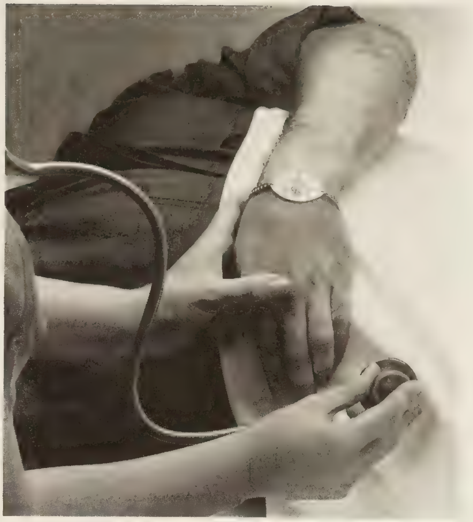

Are you a member of the Medic Alert team? If not, you should be. Each year the Medic Alert Foundation is responsible for helping thousands of patients with unique medical conditions during emergencies. For more information on the Medic Alert program, contact the MPhA office.

Revco Vice President of Professional Affairs Al Sebok, R.Ph. was a featured speaker at the recent APhA Convention in Washington, D.C. Next month, *The Maryland Pharmacist* will feature an article by Dr. Sebok on the ways in which pharmacists and their employers share pressures and problem-solving in the ever changing world of pharmacy.

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Continuing Education Quiz

The Maryland Pharmacist **MAY, 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by July 31, 1990. A continuing education certificate for one contact credit) will be mailed to you within 30 days. Please type or print clearly.

Name ______________________________
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Is this program used to meet your mandatory CE? ☐ Yes ☐ No
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Antidotes

1. Which of the following is a true statement?
    a. When treating poisonings, it is best to induce vomiting with syrup of ipecac, and then administer activated charcoal.
    b. When treating poisonings, it is best to give activated charcoal to adsorb the poison, and then give syrup of ipecac to induce vomiting.

2. Which of the following is a true statement?
    a. If syrup of ipecac is going to be effective, it will induce vomiting within two doses or 60 minutes.
    b. Syrup of ipecac should be administered at half-hour intervals as long as needed until vomiting occurs.

3. Syrup of ipecac can be safely used to induce vomiting when the:
    a. victim is unconscious.
    b. poison is a convulsant.
    c. poison is aspirin.
    d. poison is a petroleum distillate.

4. The percentage of poisonings that occur in children under 5 years of age is estimated to be:
    a. 25 percent.
    b. 50 percent.
    c. 75 percent.
    d. 100 percent.

5. All of the following are true statements EXCEPT:
    a. it is best to wait until symptoms of poisonings occur before initiating antidotal therapy.
    b. while emesis should be induced as soon as possible after a poisoning, syrup of ipecac may still be effective several hours after the poison has been ingested.
    c. when the exact quantity of a poison is unknown, it should be assumed that it was a sufficient quantity to cause serious problems.
    d. it will be futile, and even dangerous, to attempt to remove a poison from a victim's stomach if he is convulsing.

6. Of the following, which is adsorbed by activated charcoal?
    a. Alcohols
    b. Alkaloids
    c. Cyanides
    d. Mineral acids

7. The best fluid to use to dilute an ingested poison is:
    a. carbonated beverages.
    b. caffeine/tea.
    c. milk.
    d. water.

8. Of the following, the first, and most important question to be answered before treating a poisoning is:
    a. "Has the victim vomited yet?"
    b. "Is the victim conscious?"
    c. "How long ago did the poisoning occur?"
    d. "Where did the poisoning occur?"

9. The best alternative to use for inducing vomiting if syrup of ipecac is not available is:
    a. activated charcoal.
    b. salt solution.
    c. mechanical stimulation of the throat.
    d. soap solution.

10. Activated charcoal would most likely be beneficial in poisonings with which of the following substances?
    a. Alkali
    b. Malathion
    c. Aspirin
    d. Iron salts

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THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Santi V. Lusco at 254-1772.

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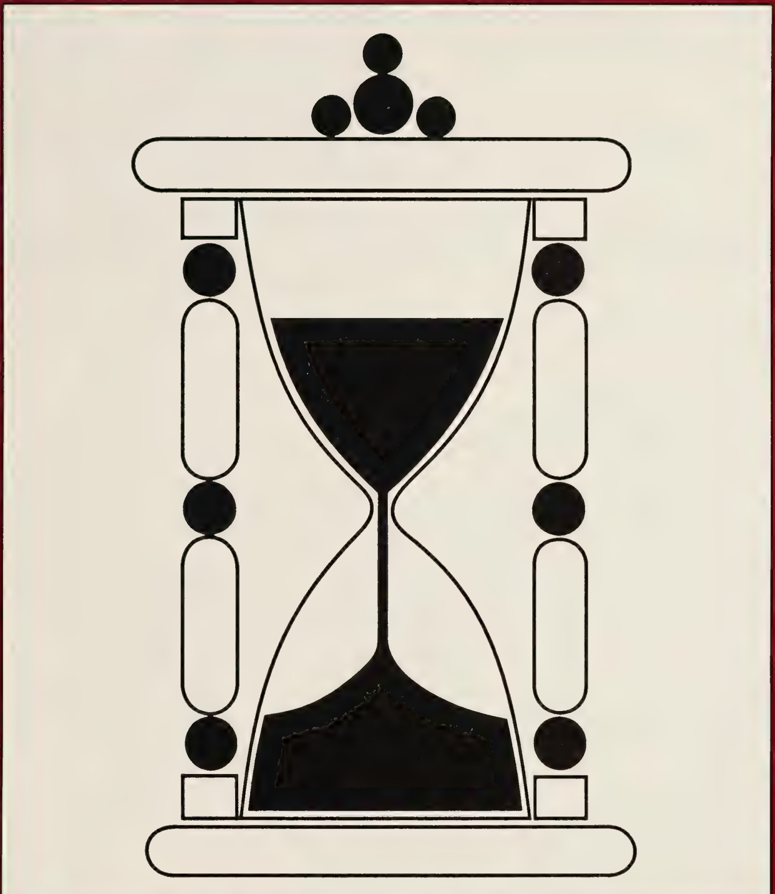

Is Time Running Out for Discriminatory Pricing?

THE MARYLAND PHARMACIST

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JUNE, 1990 VOL. 66 NO. 6

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The Beginning of the End?

Except for my final presentation at the 108th Annual MPhA Convention in June, this will be my last opportunity to address the members of the Maryland Pharmacists Association as your president. Not only is the end of my term approaching, another, more important, end is also in sight—the end to discriminatory pricing.

When I took office last year, one of my top priorities was to work in anyway I could to eliminate discriminatory pricing policies by pharmaceutical manufacturers. Whether you practice in a community or institutional setting, discriminatory pricing has tarnished every pharmacist's reputation by creating the false impression that pharmacy is responsible for the ridiculous price increases that have become all too commonplace. How can it not when some patients can purchase medications from sources at prices lower than any regular pharmacy can?

With the drive and determination of pharmacy's own Don Elliott in the Maryland House of Delegates, we are now the first *and only* state in the country with a clear position against discriminatory pricing policies. Our strong stance is becoming a model for other pharmacy associations around the country.

Following on the heels of our efforts, Senator David Pryor has announced federal legislation designed to alleviate many of the unfair burdens experienced by Medicaid programs through questionable pricing policies of manufacturers. As the final touches were being applied to the legislation, Merck Sharp and Dohme became the first drug company to ''break from the fold'' and announce an ''Equal Access'' (read rebate) program to Medicaid agencies nationwide.

This is the beginning of the end of discriminatory pricing. We as pharmacists must maintain our diligent determination to see that all consumers are afforded the same opportunity to purchase prescription drug products at the same prices. It has been an honor to serve you this past year and I hope that the strides we have made over the past year will be only the beginning of an even stronger and greater Association.

Continuing Education

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Advising Consumers on OTC Products for Prickly Heat and Diaper Rash

by Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology
and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph.,
Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to:

1. discuss the proposed causes and major prophylactic means for avoiding prickly heat and diaper rash;
2. present current thought on the medical management of these two disorders.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from
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Objectives

At the conclusion of this lesson, the successful participant will be able to:

1. identify the various types of prickly heat and explain their differences;
2. suggest how to best prevent and treat prickly heat;
3. compare and contrast the theories on causes of diaper rash;
4. suggest how to best prevent and treat diaper rash.

Rash commonly occurs as the result of excessive heating or occluding of the skin, or from leaving urine or feces-soiled diapers on infants or small children for extended periods. Diaper rash appears in adults and infirm patients who are incontinent and/or confined to bed. Prickly heat rash may also appear at any age during any season.

Pharmacists are often asked to recommend OTC products to treat both afflictions. Consumers also want to know what causes them and how to prevent them. Unfortunately, there is confusion between the two disorders regarding their causes, prevention, and treatment.

This month's lesson defines prickly heat and diaper rash. It provides the physiological basis for development of each disorder, and presents current guidelines for preventing and treating them. Pharmacists will also learn specific points of consumer advice to pass along.

Prickly Heat

Lesions of prickly heat (miliaria, heat rash) were described nearly 2000 years ago. Amelius Cornelius Celsus (25 B.C. to 50 A.D.) discussed pustules caused by sweating in *De Medicina*, and Pliny the Elder (23 to 79 B.C.) wrote of pimples caused by sweat in his *Natural History*.

Causes of Prickly Heat. Today we know that prickly heat is caused by obstruction of sweat gland openings. Sweat is trapped within the dermal layer causing localized irritation and inflammation, itching and generalized discomfort. The term "prickly" describes sensations variously referred to as "stinging" or "stabbing." The disorder is visible as clusters of pinhead-size bumps.

Prickly heat occurs most commonly during humid conditions with temperatures above 90°F and low wind velocity. It may appear during febrile illness when the skin is covered with heavy or obstructive clothing that causes intense sweating. Skin areas subjected to friction, such as the belt line, are especially vulnerable. The condition also occurs when individuals sit or lie for extended periods on rubber or plastic sheets which retard sweating. Thus, the disorder may occur at any age.

Types of Prickly Heat. There are several types of prickly heat. *Miliaria crystallina* describes the condition caused by sweat duct obstruction within the stratum corneum, just beneath the surface of the skin. A larger vessicle, 1 to 2 mm in diameter, forms over the skin surface. This condition occurs on the neck, axillae, and chest of infants, although it also appears on persons of all ages.

Lesions are usually asymptomatic until they are broken open by rubbing or scratching. Lesions filled with clear fluid, which can be easily broken with the fingernails, are characteristic of *miliaria crystallina*.

When obstruction occurs deeper within the epidermis, the disorder is termed *miliaria rubra* because of its red coloration. Miliaria rubra may be confused with contact dermatitis or drug eruption. It is the only form of prickly heat characterized by inflammatory lesions. Sweating causes small red nodules (solid bumps) that overlay red vessicles. Itching and burning quickly follow any event which induces sweating.

Miliaria profunda describes obstruction of the sweat duct within the upper dermis. This type predominately occurs on the trunk and upper legs. It results in flesh-colored or whitish papules. *Miliaria profunda* is often asymptomatic, and waxes and wanes with sweating.

Although sometimes referred to as "gooseflesh," *miliaria profunda* should not be confused with *cutis anserina*. This is an evanescent (i.e., disappears quickly) follicular disorder associated with cold and shock, rather than heat and sweating.

Any injury to the sweat duct can cause obstruction to sweat flow. The patient may remain asymptomatic until sweating is stimulated.

Prickly heat occurs more frequently in infants, geriatrics, and other persons with atopic disease than in young and middle-aged adults. *Miliaria crystallina* generally clears quickly without complications, with or without treatment.

Miliaria rubra may persist for two to three weeks while sweat ducts remain obstructed. With repeated skin damage, as from persistent scratching, additional pathology occurs leading to *miliaria profunda*. Secondary infection may occur with *miliaria rubra*, including impetigo and folliculitis. It is, therefore, important to keep affected areas clean at all times.

When widespread obstruction to sweating occurs, as when 50 percent or more of the body surface is affected, anhidrosis (cessation of sweating) may result. In hot environments when body temperature regulation depends on properly functioning sweat glands, this may lead to serious complications.

Treatment and Prevention. Miliaria is best treated by preventing any stimulus that initiates sweating. This is accomplished by remaining in a cool environment and avoiding heavy work or exercise. Air conditioning may help severely affected persons.

Clothing should be loose fitting, light-weight, and absorbent. Lying on a sheepskin mat, and removing plastic or rubber mattress covers are beneficial. During periods of prickly heat flare-up, plastic diaper covers (rubber pants) should not be placed on infants.

Cool sponge baths with a colloidal oatmeal product followed by application of a cooling skin lotion are helpful. Hydrocortisone 0.5% lotion or cream may help reduce local inflammation causing obstruction, but this should be reserved for persons two years of age and older, unless specifically ordered by a physician.

Diaper Rash

Diaper rash (diaper dermatitis, napkin rash, nappy rash) is a common skin irritation in infants. It reportedly accounts for up to 20 percent of all physician consultations for children five years of age and younger. In one study, approximately 35 percent of all infants experienced diaper rash. Incontinent adults may also suffer from diaper rash.

Diaper rash is different than prickly heat, although they may physically appear the same. Diaper rash is also occasionally confused with other cutaneous disorders including candidiasis, dermatitis, psoriasis, scabies, and herpes simplex. Specifically, diaper rash is a localized, red, inflammatory response that results from dermal contact irritation caused by urine, feces, or both.

Occasionally, the rash may appear on areas other than those in contact with a diaper, such as the arm or face. When this occurs, it represents involvement of some factor other than the primary affliction causing the diaper rash. These infants should be examined by a physician before being treated with OTC remedies.

Types of Diaper Rash. Diaper rash is categorized into four separate, distinguishable forms: chafing dermatitis, demarcated confluent erythema, discrete shallow ulcerations, and a beefy red erythema with confluent rash.

Chafing dermatitis is the most common type. It is characterized by mild redness and scaliness over the area in contact with the diaper. The discretely demarcated confluent erythema rash is confined to skinfold areas and sometimes has an associated white exudate present. Discrete shallow ulcerations, a third form of diaper rash, appears over the entire diaper area. A beefy red erythema with confluent rash is the form of diaper rash frequently associated with pustules. It is usually caused when the rash is compounded by infection with a fungus such as *Candida albicans*.

Causes. There are many theories supporting causes of diaper rash and even more proposed methods of prevention and treatment. It is unfortunate that the exact etiology remains unknown. However, most authorities believe the condition represents a type of irritant contact response.

Diaper rash develops when the skin remains in contact with urine or feces for an extented period of time. The precise component of urine or feces which initiates the problem remains elusive. A single component of either urine or feces, or a combination of substances may be responsible.

The first proposed cause of diaper rash was published in 1886. This theory stated that a strong ammonia odor was present whenever diaper rash appeared, so the problem was, therefore, due to ammonia. Today, many experts still adhere to this theory.

The evidence in favor of ammonia as the cause of diaper rash is strongly suggestive. For example, an ammonia-liberating bacterium *Brevibacterium ammoniagenes* can be readily cultured from urine of infants with the condition. Other microorganisms that can split urea to produce ammonia have also been identified. These are present in high concentrations in urine of affected individuals.

Conversely, the ammonia theory has been challenged by others. Some studies show that ammonia levels actually are the same in urines of affected and unaffected infants. Studies also reveal that when ammonia is applied with occlusion to the buttocks of infants over a 24-hour period, at concentrations five times that normally found in urine, it fails to produce an inflammatory response. Even *Brevibacterium ammoniagenes* and the other ammonia-liberating microorganisms have been reported in urine of infants who do not have the dermatitis.

A more plausible theory is that diaper rash is not caused by ammonia *per se*, but by a combination of components of decomposing urine.

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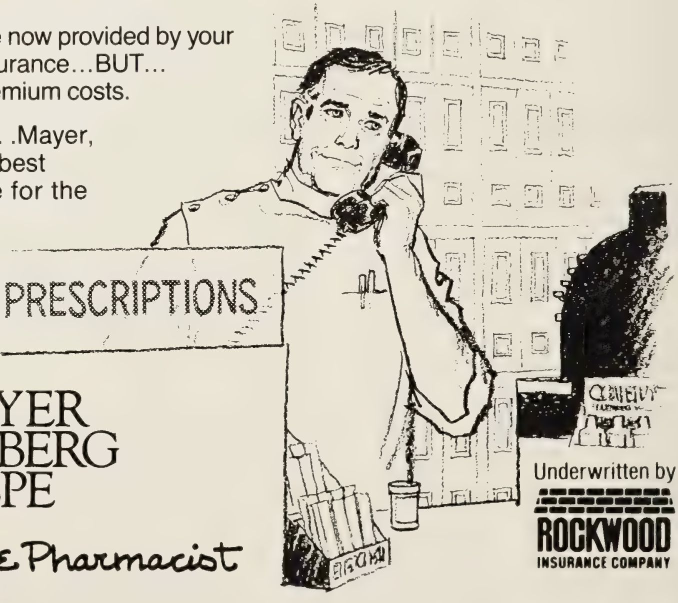

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These could be microbial or chemical. The ammonia odor may or may not be coincidental.

Fresh urine applied to skin of infants affected by diaper rash does not cause the problem. When it is allowed to stand at room temperature for several hours and is then applied, it can irritate the skin.

The yeast *C. albicans* is reportedly found on the skin of over 80 percent of all infants affected with diaper rash. When the skin's normal defenses are broken by other causative factors, the infection can occur.

Moisture *per se* does not cause diaper rash. It enhances microbial growth and thereby increases the chance for rash. The time period that a wet diaper must remain in place before a problem develops is unknown and probably differs with each infant. Frequent diaper changes both prevent and treat diaper rash.

The issue of pH is controversial. Some studies show that alkaline urine and feces left in contact with skin cause diaper rash, whereas acidic contaminants do not. The studies are not uniform, and their results are extremely variable. It is known that microbial growth is generally suppressed by an acid medium. When diaper rash is caused or aggravated by microorganisms, the local pH may be an important variable. Proponents of ammonia as an initiating factor raise the point that it is primarily responsible for raising the normally acidic urine to an alkaline pH. This is more irritating than recently voided urine.

Skin irritation may occur when diapers rub against the skin. Mechanical irritation may, therefore, play a significant role in development of diaper rash.

Prevention/Treatment. Because the precise cause of diaper rash is unknown, specific treatment is impossible. Prevention, therefore, is of utmost importance.

The need for frequent diaper changes must be stressed to parents. The diaper should be changed as soon as possible after it becomes wet. The diaper area should be thoroughly cleansed with warm water and a mild soap, and completely dried before a clean diaper is applied.

"Dry" diaper corners should not be used to wipe the baby's skin. Although they appear clean, they may contain millions of microorganisms. If the microorganisms are not removed by cleansing, the chance for infection is increased when the baby urinates the next time.

Infants who are highly susceptible to diaper rash may be placed on an open diaper during naps. Babies frequently urinate shortly after falling asleep. Therefore, they can be periodically checked and the diaper replaced if necessary.

Occluding the skin with rubber or plastic pants over the diaper should be avoided. These items are suitable for brief periods when the infant is away from home. Occlusion causes increased hydration of the diaper area.

Consumer-directed advertising strongly suggests that certain types of diapers are better than others. No study has demonstrated significant benefits of cloth over disposable diapers and vice versa.

Significant differences arise between commercially laundered and home laundered diapers. Commercial laundry services clean diapers at high temperatures which very effectively destroy all microorganisms. They also remove chemical irritants afterwards with thorough rinsing. These diapers are as clean and sterile as possible.

Parents washing diapers at home should use hot water followed with thorough rinsing and the hot cycle of the clothes dryer. Before washing diapers, soaking them in a household bleach solution (diluted as directed on the label) or vinegar (one cup vinegar in a half-filled washing machine tub) may help reduce the potential to irritate the skin.

The compounds listed in Table 1 are available over-the-counter for treatment of diaper rash. Products containing boric acid, including powders, ointments and solutions, have long been used. However, boric acid can be readily absorbed across inflammed and irritated skin and several infant fatalities have been reported from its use. For this reason, boric acid or products containing it should not be used to treat diaper rash.

Products containing quaternary ammonium compounds are sometimes applied directly to the skin, and others are used as diaper rinses. Some studies demonstrate that these substances reduce the occurrence of diaper rash; others show conflicting results.

TABLE 1

Representative OTC Products for Treating Diaper Rash

Product	Manufacturer	Form
Balmex Baby	Macsil	Powder
Desitin	Leeming	Ointment
Diaperene	Glenbrook	Cream Powder
Diaperene Peri-Anal	Glenbrook	Ointment
Mexana Medicated	Plough	Powder
Taloin	Adria	Ointment
ZBT Baby	Glenwood	Powder

Products containing hydrocortisone 0.5% are not indicated for use on infants less than two years of age. When they are used on older children, application should be restricted to less than one week to minimize the risk of systemic toxicity from absorption. Hydrocortisone treats symptoms without altering their actual cause, and a potential for toxicity due to absorption from occluded areas exists. For these reasons, products containing zinc oxide or another skin protectant should be tried before reverting to hydrocortisone.

One of the most popular OTC items used in diaper changes is talcum powder. Talcum may help soothe and dry moist skin, but is has not been proven that it actually prevents or treats diaper rash. Products containing corn starch should not be applied because this serves as culture medium for *C. albicans* which can worsen the problem

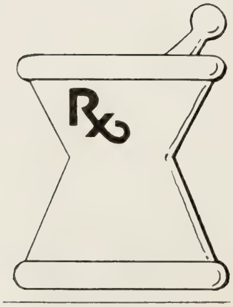
Overview

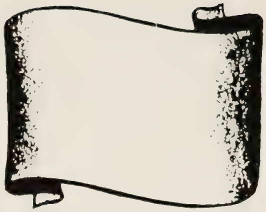
Prevention is the best treatment for both prickly heat and diaper rash. For the former, stimuli to sweating should be avoided as much as possible. For the latter, careful and meticulous detail to maintaining prompt diaper changes with frequent airing of the baby's skin are important.

Since neither disorder is overly serious in most cases, sometimes a cavalier attitude about prevention and/or treatment occurs. It is true that in most cases the disorders cause little more than discomfort, but complications such as secondary infection can result.

OTC products are useful to help prevent and to treat these afflictions. Persons using them should be aware of the limitations and the expected outcomes. There is probably no proven difference in various products in Table 1 that contain one or more ingredients. However, if one product fails to provide adequate relief, another one containing different ingredients could be tried. Persistent or long-standing conditions should be referred to a physician.

Poisoning Risk. The literature supports the belief that infants are at high risk of poisoning during diaper changes. One poison control center received inquiries in a three-month period relating to 138 exposures to potential poisons in children three years of age and younger. These children were being attended to at the time. One hundred twelve (81%) of these children ingested or inhaled one or more of 30 different substances by grabbing the product when the parent looked away. The remaining 26 children were given the item to hold while the diaper was being changed. Parents should be warned to keep dangerous items out of the reach of children during diaper changes.





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Dickenson's Pharmacy
continued from page 9

The fight is more intense in California than perhaps anywhere else because that state's government is trying innovative—and vigorously resisted—approaches to a problem that, frankly, every state has. These approaches include a bid system among manufacturers, so that the lowest bidding firm gains exclusive access to the Medicaid market for a particular drug.

Marshall senses some receptivity among government leaders to the idea that pharmacists deserve a break—but the profession's case is weakened by outsider observations such as the federal Health Care Financing Administration inspector-general's view that many pharmacies do no more than mail-order does.

California is already closing retail pharmacies in record numbers, and reimbursement programs that insist on seeing retail pharmacy's role in such a demeaning light will surely increase the closures through ever-more coercive policies.

Marshall's fresh new view of this is that it is pharmacy which must change, regardless of what program's, manufacturers and FDA do. The pharmacy that slaps on a label and has a clerk pass the medication over the counter without a word is seen as doing no more than mail-order.

He's not the first to think such thoughts, or even to say them out loud. But Marshall might be the first with guts enough fight on that front. He hopes he won't be fighting pharmacists, thought—"If we allow ourselves to be pitted against ourselves, none of us will win."

In pharmacy, as in life, freedom isn't free.

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Dickinson's Pharmacy

Jim Dickinson

Freedom isn't free. On two very different pharmacy fronts last month, an often forgotten lesson was being learned again—painfully, as the most important lessons are always learned.

Both lessons were about different faces of professional responsibility, and they teach something about professional freedom that our country has seemed to find hard to remember since the last time we all fought for it in a world war—it isn't free.

The first lesson concerned a major pharmaceutical company's defensive decision to restrict from normal pharmacy distribution a particularly "dangerous" drug—clozapine (Sandoz' Clozaril)—pursuant to extremely unusual FDA labeling that it itself helped write.

Now Sandoz is one of those companies that this writer has found to be not only an affirmative "good citizen" in pharmacy, but extraordinarily candid about the occasional troubles that all good citizens have to manage from time to time.

This particular trouble was the worst kind a pharmaceutical company can get into in pharmacy—open warfare, talk of retaliatory boycotts, lawsuits and punitive losses of millions, if not hundreds of millions of dollars in sales.

Yet pharmacy had to fight, no matter how warm its past relationships with the company.

The Clozaril Patient Monitoring System (CPMS) imbedded in the official FDA-approved labeling for the schizophrenia-management drug tied all distribution of the product to a Baxter Healthcare-Roche Biomedical subsidiary, Caremark. Inevitably, that excluded the drug from every regular pharmacy in the country, including even those in government hospitals; ancillary care services were all bundled into Caremark.

The reason given for this was Clozaril's extraordinarily high propensity to cause fatal agranulocytosis, shown in prior marketing overseas, where some countries had banned it. FDA-approved CPMS would ensure that no prescription was filled without a fresh, weekly white blood cell count from each patient.

Earnest, and sometimes angry, words flew back and forth between Sandoz and national pharmacy groups.

"You state that your proposed distribution plan for Clozaril 'continues to emphasize the expanding role of pharmacy,' " protested NARD executive vice president Charles M. West in one volley. "How can this be so? A plan that proposes to sidestep the nation's 65,000 retail pharmacies does not 'emphasize' pharmacy's role, it demeans it."

American Pharmaceutical Association executive vice president John A. Gans poured scorn on Sandoz' claim that Clozaril was all that much more dangerous than chloramphenicol or Accutane (also banned overseas) but still kept within regular U.S. pharmacy distribution channels.

He hinted that Sandoz had economic gain through its Caremark deal uppermost in mind, and maybe here was even a new way of stalling eventual generic competition (what generic drug company could satisfy FDA about its ability to restrict distribution in just the same way?).

Sandoz had other things to worry about, however. Here was a drug over which it could be ruinously sued for patient harm. The U.S., in that respect, is unlike any other country. The risks here are unique and worsening, and Sandoz felt it needed centralized control and immediately current monitoring of all the white blood cell counts.

Clozaril is not necessarily like chloramphenicol and other especially toxic drugs, group vice president Jacques F. Rejeange wrote the pharmacy groups. Only after the fact did we learn of all the chloramphenicol deaths from agranulocytosis, and Sandoz wants to avoid that with Clozaril.

As this column went to press, it appeared that the fighting might produce an acceptable compromise. FDA, unwilling to be in the center of the fight, had indicated that it was not insisting on CPMS per se—any program that as effectively monitored white blood cell counts would do.

Sandoz, for its part, indicated openness to alternatives that would achieve the same thing, and the two sides were talking.

Obviously, an alternative that could be acceptable to both sides would necessarily be a major showcase of pharmacy's collective professional responsibility.

The second, far different lesson on this same cost-of-professional-freedom theme involves the bellwether state of California's Medicaid program (Medi-Cal), and it's not as close to resolution as the Clozaril conflict seemed to be.

Under the state pharmacy association's fresh new leader, Robert P. Marshall, a potent mix of forces (and hostilities) are at work, pitting manufacturers, pharmacists, welfare patients, politicians and public opinion against each other.

As Marshall describes it, it's a case of a program with a Size 12 service demand having to fit into a Size 7 budget. Pharmacies, pegged to the same professional fee for four years and now hit with an AWP-minus-5% product cost penalty, feel it's time somebody else chipped in.

Concluded on page 8. . . .

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References
1. *USP DI Update, September/October 1988, p 120.*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774.*

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Carcinogenesis, Mutagenesis, Impairment of Fertility–A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy–Teratogenic Effects–Pregnancy Category C–Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers–Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use–Safety and effectiveness in children have not been established.

Use in Elderly Patients–Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic–Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular–In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS–Rare cases of reversible mental confusion have been reported.

Endocrine–Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic–Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental–Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity–As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other–Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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The Relationship Between Employed Pharmacists and their Employers: The Chain Community Pharmacy Setting

Al Sebok, R.Ph.
Vice President, Professional Relations
Revco Drug Stores

Who is the boss? Is it the vice president at corporate headquarters? Is it the store manager? Is it the pharmacist-owner or chief pharmacist?

I say we're all employees, because we are all employed by the patient to help him or her. We are all somewhere in the service-delivery pipeline—and waiting at the end of that pipeline is the patient.

It is patient care that decides whether we survive. Every one of us is only as good as the care we give.

We've all been in the stores. In 40 years in the drugstore industry, I have worked in every possible aspect of pharmacy and pharmacy management. I have been a pharmacist since 1953. I have managed everything from one store to 2,000 stores.

Employers and employed pharmacists should concentrate on working together to deliver quality care to their patients and customers.

There are others here who could tell you the same thing: Dianne Tharp and Al Lockamy, both from Revco.

Dianne was a pharmacist in the Erie, Pennsylvania area. For many years now she has been a corporate manager, in professional operations and third-party operations.

Al has been a Revco pharmacist for many years in Raleigh, North Carolina, and is now pharmacy supervisor in that area.

Dianne and Al are examples of the interchange that goes on between pharmacy management and pharmacy practice. It's the quality of this interchange that determines if the pharmacist has job satisfaction, if the drugstore does well.

The health care delivery system in America today is very complicated. It offers lots of options to patients; inpatient and outpatient services, HMOs, PPOs, third-party payors, mail-order pharmacy, emergency and Medi-center style facilities, family physicians, etc., etc. Not to mention the issues of pharmacist-prescribing and physician-dispensing!

Employer and employed pharmacist must work together to clarify their services in this environment. They can't take up positions as opponents.

If they do, where does that leave the patient?

The patient, the customer, is the recipient of something that employer and employee-pharmacist create and deliver together: pharmacy service.

That is what we are all here for. Service is what we provide–not just the volume of scripts filled. Counselling patients . . . informing customers . . . forging relations with doctors.

A study done for Revco by the research firm Yankelovich, Clancy Schulman over a year ago identified those things customers want most from a drugstore. According to the Yankelovich study, the three most important things people want from a drugstore are, in order:

- Professional and experienced pharmacists.
- Likeable pharmacists.
- Helpful pharmacists.

Thousands of chain pharmacists deal with millions of customers every day. What qualities should the pharmacist have to do well in that setting? Let me name six:

One: professional aptitude: thriving on challenges, strong in clinical skills. Two: a personality that is ethical, outgoing, and with a flexible approach to problem solving. Three: strong communication skills—which includes being a first class *listener*. Four: strong people skills: empathetic, motivated to help, involved in the community. Five: ambitious, proud and goal oriented. And six: innovative and versatile, with the potential for leadership.

That's what the pharmacist should provide.

What should the employer provide?

For one thing, a forum in which the pharmacist can help effect change.

In the spring of 1988, a Pharmacy Task Force was instituted at Revco. Of the nineteen people on the task force, sixteen were registered pharmacists. We asked our pharmacists to direct the company in building the chain around superior pharmacy service.

They reviewed all phases of pharmacy operations and recommended change. They looked at everything from recruitment and training to public speaking to re-ordering of pharmaceuticals. Recommended changes included the layout of the pharmacy, techniques for pharmacy marketing services, a structure for training pharmacy techs and guidelines for the preceptor-intern relationship.

If a chain is to flourish, employer and pharmacist must team up to provide quality service.

Concluded on page 12. . . .

The drugstore business is highly competitive today, because there are so many pharmacy providers. Drugstores will differentiate themselves in this competition by the level of professional service they provide.

Pharmacists will find their greatest rewards to the extent that they are able to make their store, their company, noted for the quality of its professional services.

Teaming up . . .

The practice of pharmacy is by definition fulfilling the directive of another in order to help effect a therapeutic result in the patient. It's by nature a form of teamwork.

Whether it's the team formed by the pharmacist and the manager or employer, the team formed by the pharmacist and the physician, or the team formed by the pharmacist and the patient.

The best therapies are those in which the patient participates—understands what is being done, why it's being done, what he or she should do, what effects to watch for and what results to hope for.

The best employer-pharmacist relationships are those in which both parties participate—understand a shared goal, and cooperate in coming up with ways to reach that goal.

As pharmacists, I believe we must begin today to anticipate and work toward establishing pharmacy's niche in providing health care services—not only for today, but for the future.

But counseling patients in the retail setting brings its own problems. For one thing, community pharmacists serve a busy, demanding, often impatient public. The restlessness at all our pharmacy benches and checkout counters attests to this truth.

Secondly, pharmacists are often physically removed from direct customer contact by counters or glass partitions put there to protect them. Patient counselling brings certain privacy needs that should be met in our community drug stores.

It's time more pharmacists took the initiative to counsel their patients on the health care products they are buying. In this era of self-treatment, with the proliferation of OTC products, pharmacists have a major responsibility to help patients avoid over-medication or wrongful medication.

After all, who knows more about it than the pharmacist?

It's the pharmacist's duty to counsel patients, and to let his or her employer know what's required to do that well.

It's the employer's duty to fill those requirements.

Otherwise, the quality of service by that drugstore is going to fall, and not the pharmacist, nor the employer nor the patient is going to be satisfied.

The employer must take steps to enable the community pharmacist to provide a high quality level of service: For example: Structure the physical environment of the pharmacy to promote counselling and interaction. Where possible, create as much privacy as you can, with counseling areas, separate counters, and so on.

Facilitate dialogue: for example, we have taken down the glass dividers that used to separate pharmacist from patient.

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And, facilitate dialogue between the managers and the pharmacists. The task force I mentioned is one way of doing that. It is the professionals who can tell the employers what needs to be done to effect good service, and the employers who can provide the tools to do that.

Another such tool is having the proper pharmacy systems: such as pharmacy computers, reordering procedures and third-party administration.

PAL, the interactive pharmacy computer system being implemented at Revco, helps pharmacists counsel and inform patients.

Increasingly, the pharmacist serves as the gateway to the health care system. The pharmacist is readily and easily accessible. Pharmacies are conveniently located. Many are open evenings, weekends and during the time when physicians are away from their offices.

Pharmacists are available without an appointment in emergencies, and without charge for counselling. The pharmacist can make timely and accurate physician referrals when a patient's condition warrants it.

The pharmacy serves as a clearinghouse of information. Since patients often see different doctors for various conditions, the patient profile serves as the central record of information.

The pharmacist can assess and encourage proper compliance with medication therapy, and we all know that noncompliance is a serious problem in health care today.

One thing is certain, the pharmacy profession in general, and chain pharmacists in particular, cannot accept the status quo while the health care environment changes around us.

We must respond to the changes in the health care system in a way which maximizes our contribution to the patient. We must keep better service and improved quality of life as the primary objective.

That is how pharmacists will achieve professional satisfaction, and that is how the proprietors of drugstores—whether ourselves or our employers—will profit.

Change: Inevitable and Welcome

Peter P. Lamy, Ph.D., Sc.D.

While the U.S. health care system is beset with problems of cost containment and the pursuit of excellence in care, consumers fight an alphabet soup (HMOs, PPOs, etc.), in an attempt to understand their options of care. Nevertheless, significant changes are in the making, some have recently been accomplished, some have been proposed, and some others still need to be accomplished.

Changes in the Making

Spurred on by dramatic data about coronary heart disease among U.S. citizens, the National Heart, Lung and Blood Institute (NHLBI), supported by the FDA, the USDA, the AHA, the AMA, the APHA and still others, has initiated a National Cholesterol Education Program. It is interesting to note that, clearly, the public, more so than the providers, demand more information to be able to reduce cardiac risk. Importantly, the recommendations to accomplish this massive public health program center around the need for an interdisciplinary approach, an approach that has long been recommended for the long-term care sector.

Changes Accomplished

In 1986, there were 1.6 million residents in nursing and related care homes (Advancedata 147:1, 1988). Not counting hospital-based facilities, there were approximately 1,550,000 residents, of which 1,250,000 were 65 years old and over. The number of minority residents (blacks and hispanics) had risen to almost 10% of the total number. Estimates are that in a short 15 years, there may be 2.5 million residents in these facilities.

Problems have been recognized and addressed. In late December 1987, both houses of Congress passed the "Omnibus Budget Reconciliation Act of 1987" (OMBRA). Distinctions between SNFs and ICFs will now be phased out. All nursing homes must have a registered nurse on daytime duty, eight hours/day, seven days/week. Importantly, resident's rights will be strengthened, including required access to an ombudsman.

Changes Proposed

October 16, 1987 may well have been a fateful day for elderly residents of long-term care institutions. It is the day when new federal regulations were proposed (Federal Register, Vol. 52, No. 200, 38581–38606, 1987). If these proposals are accepted, and all indications are that they will:

1. The number of patients to receive medication regimen review services will increase dramatically.
   - —*ALL* patients, not only federally-financed patients, will have to have their regimen reviewed by a pharmacist.
   - —In addition, not only will residents in skilled nursing facilities be covered by that service, but so will residents in ICFs.
2. More importantly, the review will have to proceed in an entirely different and much more sophisticated mode. Numbers are out. Outcomes, both negative and positive, are in. An important feature of these proposed regulations is the use of objectively measurable standards that describe desirable, positive outcomes to be achieved by a facility, and negative outcomes to be avoided.

Two of the new standards will serve as examples.

Standard: Drug Therapy

The facility must ensure that each resident's drug regimen is free of:

(1) unnecessary drugs (deleted in the directive)
(2) unnecessary dose levels;
(3) undue adverse consequences; and
(4) significant medication errors and significant medication error rates.

Standard: Antipsychotic Drugs

Based on comprehensive assessment of a resident, the facility must ensure that:

(1) Residents who have not used antipsychotic drugs are not given these drugs unless a physician certifies that antipsychotic drug therapy is necessary to treat a specific condition; and
(2) Residents who use antipsychotic drugs receive gradual dose reduction drug holidays, and behavioral programming in an effort to discontinue these drugs.

Comments: Antipsychotics

Haloperidol ranks sixth among the most frequently used drugs in long-term care institutions, and thioridazine ranks seventh (they rank 98th and 99th among drugs most frequently used for community-living elderly). It has been suggested that their use often serves institutional rather than patient needs. Antipsychotics, in concert with other chronic care drugs, control symptoms and do not cure. They can also cause a great number of side effects in the elderly. Thus, before prescribing, target symptoms (behavioral, subjective and objective findings) need to be charted and grouped initially as potentially drug-responsive. In the elderly, one would expect to find altered pharmacokinetic characteristics, because of a larger volume of distribution for lipid-soluble drugs, altered liver blood flow, and reduced activity of liver microsomal enzymes (metabolism). Thus, one should expect slower clearance and higher blood levels. Pharmacodynamically, greater receptor sensitivity should be expected. Patients receiving these drugs chronically should monitored for appearance of the neuroleptic malignant syndrome (high fever, fluctuating delirium, muscular rigidity, symptoms of major autonomic dysfunction), for extrapyramidal side effects, TD, and Parkinsonian effects, and for signs of anticholinergic toxicity. Antipsychotics double the risk of falling and fractures.

Changes Still Needed

It has been estimated that for every nursing home resident, there are four community-living elderly needing the same kind of services as an SNF resident. Home care, indeed, is the fastest growing sector of the health care system. The existing LTC system favors nursing homes over community care for frail elderly, mainly by paying for nursing home care for chronic conditions but not for long-term care in the community. Based on community care demonstrations (Health Care Financing Review, Vol. 8, No. 4, Summer 1987), it appears that community services make people better off. There are no substantial reductions in family caregiving. Policymakers need to address urgently questions on eligibility and how these services can be delivered efficiently.

Some problems have been identified, that might occur when a patient is to be transferred from institutional care to home care. If that discharge is to be successful in terms of continued good therapeutic outcome, there must be a match between post discharge environment on one hand and patient/caregiver on the other. Before discharge, the patient's medication regimen should be reviewed with the following points in mind:

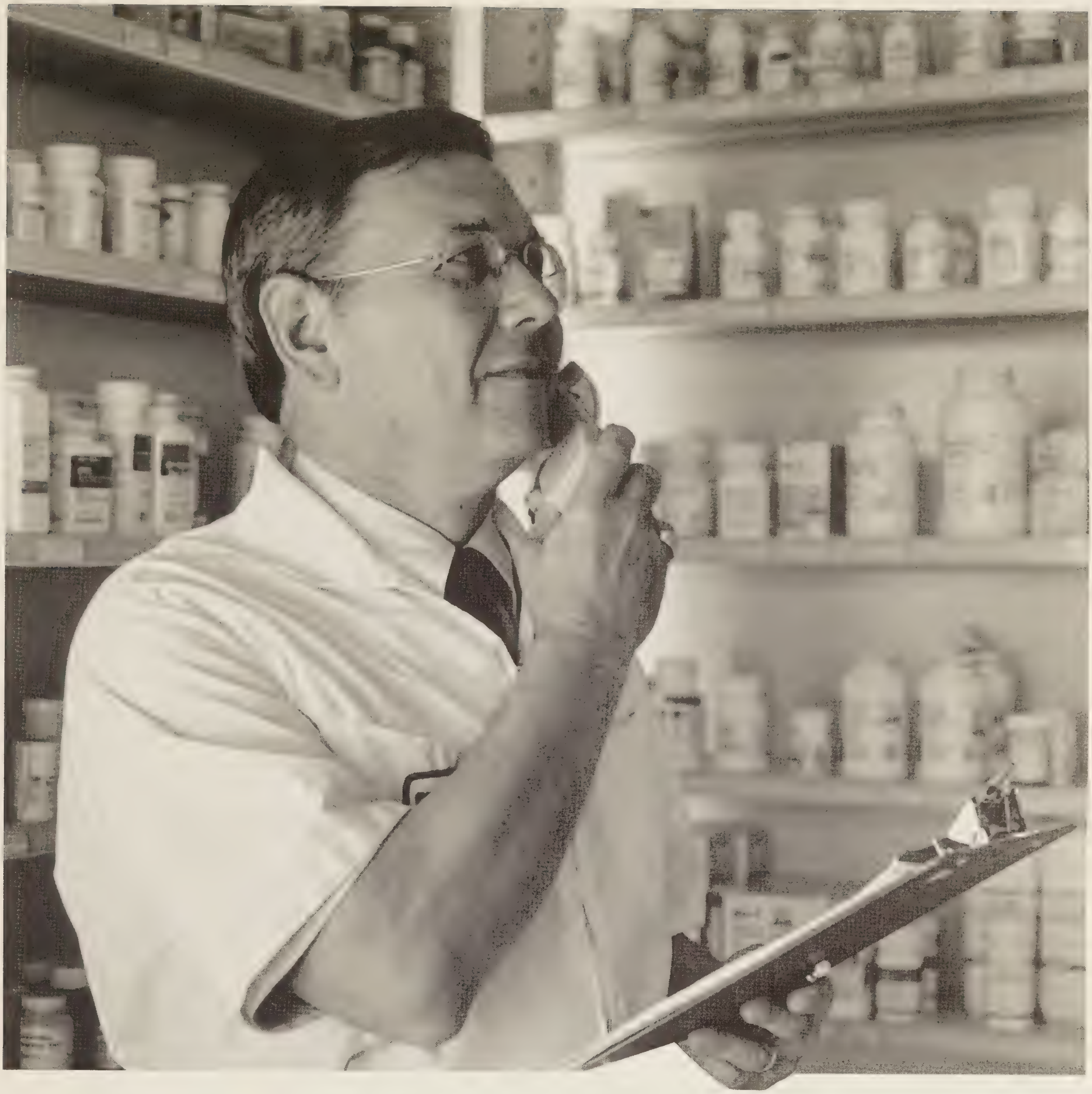
1. Should certain drugs be withdrawn from the existing regimen? If a benzodiazepine is considered, one should know that dependence and withdrawal reactions are recognized risks of prolonged benzodiazepine therapy. As many as 45% of elderly patients may be affected, withdrawal symptoms possibly lasting up to four or five weeks.
2. Of the drugs to be continued, are doses and patient's response stable, particularly for drugs that may have a major CNS effect? The patient must have had appropriate monitoring before discharge, and monitoring must be continued in the new environment.
3. Are new drugs to be added to regimen? If so, select drug based on:
    a. Age-related alterations in pharmacodynamics and pharmacokinetics
    b. Prior patient response to a given drug
    c. Patient's physical status
    d. Side effect profile of a given drug, considered in the context of the entire regimen
    e. Ability of patient to handle selected dosage form. Perhaps compliance aids, such as calendar cards, would be indicated.
    f. Ability of patient to meet the cost of the medication (both one-time cost and long-term cost)

The problems of the home care patient may differ sharply from those of the resident of a nursing home. The elderly diabetic patient at home must create an existence built around an injection schedule (can patient draw up medication?), having refrigeration available, and the disposal of used syringes. There must be an appropriate environment for urine testing and the storage of drugs and testing materials.

Perhaps, before discharge, there ought to be a final assessment of the patient's ability to perform "activities of daily living"; i.e., bathing, dressing, eating, toileting and other personal care activities. As well, the patient's "instrumental activities of daily living" should be assessed; i.e., ability to make telephone calls, handle money, handle medications, preparing meals, and other tasks.

Success can be further insured by an environmental assessment prior to discharge: what will be the patient's satisfaction with the new environment, utilities, appliances, problems of home safety, etc.? Will patient and/or caregiver be able to handle the mechanics of respiratory equipment? There should also be information available on the caregiver, the caregiver's understanding of the patient's needs and medication regimen, and caregiver's ability to observe, monitor and report, and the caregiver's physical status. Knowledge of community resources available is paramount.

Finally, the interval between discharge and first follow-up appointment must be carefully tailored to the patient's severity of illness, expected changes in the therapeutic regimen, and need for laboratory evaluation. When therapeutic outcome does not meet expectations, a number of possibilities ought to be investigated. First and foremost, the patient's compliance behavior (over- and underuse) ought to be checked. Check for new OTC drugs. Perhaps patient or caregiver are crushing certain dosage forms for mixing with applesauce and easier administration. An exceedingly long list of oral dosage forms should not be crushed, since they may be slow-release dosage forms, liquid-filled capsules, enteric coated dosage forms, and many others. Finally, the drugs obtained in the community may be generic dosage forms and use of chemically equivalent drug products from different manufacturers may, in individual patients, produce erratic results, even though large-scale deviations have not yet been shown.



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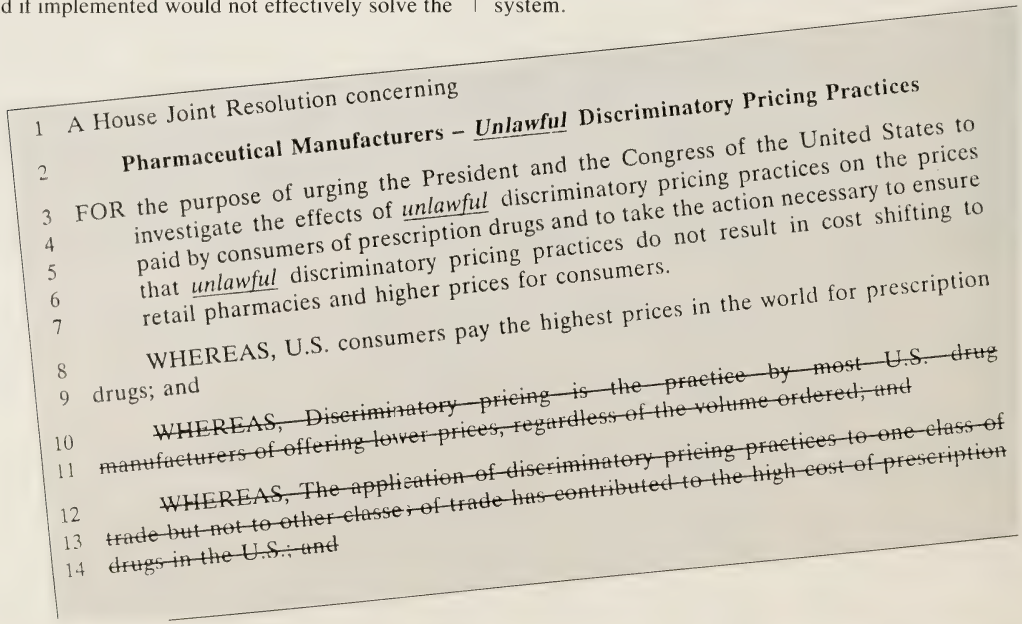
1990 Report From Our Lobbyist

Robin Shaivitz

The 1990 session of the Maryland General Assembly was clearly a success for the Maryland Pharmacists Association. Once again, our organization was able to pass most of the bills we supported, defeat most of the bills we opposed, and amend the rest to our satisfaction. One reason we were to successful in 1990 was because when asked, our members took action quickly to contact their legislators. Our member's phone calls and letters were especially helpful in moving House Joint Resolution 9 (Pharmaceutical Manufacturers—Discriminatory Pricing Practices) through both the House Environmental Matters and the Senate Finance Committees. Furthermore, the tireless efforts of the Association's Legislative Committee to personally get involved on this issue definitely contributed to our victory.

We devoted much of our attention this session to the issue of triplicate prescriptions. We knew at the beginning of the session that "trip scrip" was not enforceable and if implemented would not effectively solve the problems related to the illegal diversion of prescription drugs into the State's illicit drug market. Also, we strongly believed that triplicate prescriptions would put too much of an onus on the retail pharmacist, who would have to send a copy of each schedule II prescription to the Health Department, and keep another copy in records. We strongly supported the idea of having a drug utilization review system or DUR as an alterative to triplicate prescriptions. We viewed our DUR system, which is already in place and administered by our Association for Medicaid, as enforceable and as less of a nuisance to our pharmacists than triplicates.

On this issue, it was necessary to work on both the Executive and Legislative levels to ensure that triplicate prescriptions were not implemented in Maryland. First we worked with the Governor and his staff in an effort to create an executive order that would help to stop the influx of illegal prescription medication into the drug market without using a triplicate prescription system.



A House Joint Resolution concerning

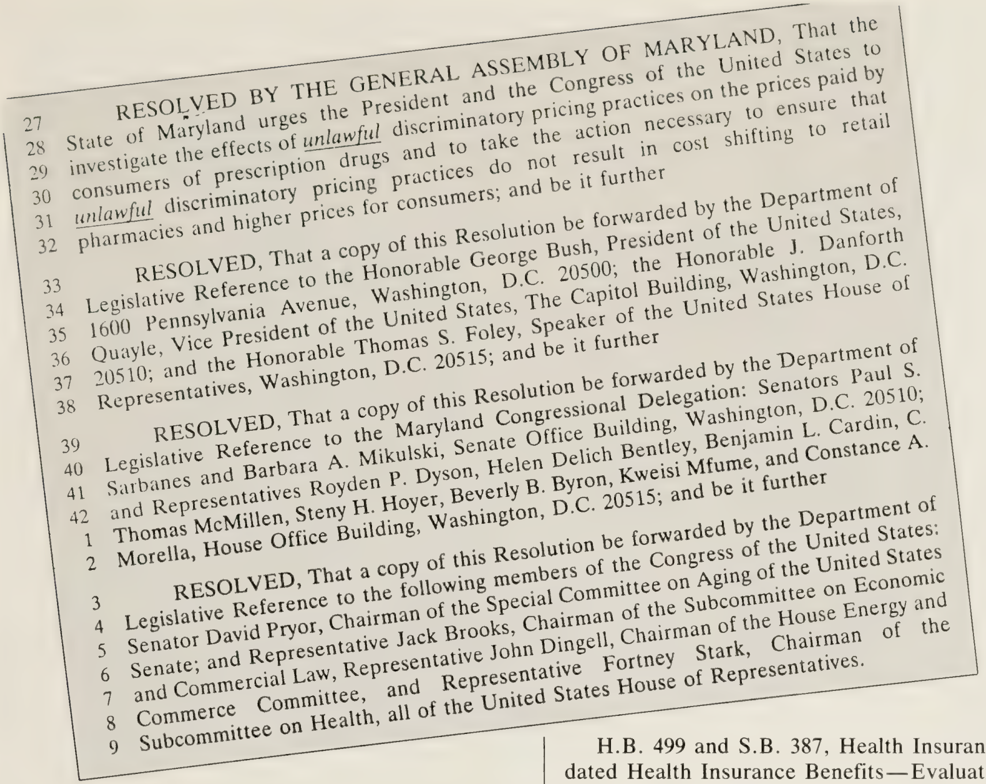
Pharmaceutical Manufacturers – *Unlawful* Discriminatory Pricing Practices

FOR the purpose of urging the President and the Congress of the United States to investigate the effects of *unlawful* discriminatory pricing practices on the prices paid by consumers of prescription drugs and to take the action necessary to ensure that *unlawful* discriminatory pricing practices do not result in cost shifting to retail pharmacies and higher prices for consumers.

WHEREAS, U.S. consumers pay the highest prices in the world for prescription drugs; and

~~WHEREAS, Discriminatory pricing is the practice by most U.S. drug manufacturers of offering lower prices, regardless of the volume ordered; and~~

~~WHEREAS, The application of discriminatory pricing practices to one class of trade but not to other classes of trade has contributed to the high cost of prescription drugs in the U.S.; and~~



RESOLVED BY THE GENERAL ASSEMBLY OF MARYLAND, That the State of Maryland urges the President and the Congress of the United States to investigate the effects of *unlawful* discriminatory pricing practices on the prices paid by consumers of prescription drugs and to take the action necessary to ensure that *unlawful* discriminatory pricing practices do not result in cost shifting to retail pharmacies and higher prices for consumers; and be it further

RESOLVED, That a copy of this Resolution be forwarded by the Department of Legislative Reference to the Honorable George Bush, President of the United States, 1600 Pennsylvania Avenue, Washington, D.C. 20500; the Honorable J. Danforth Quayle, Vice President of the United States, The Capitol Building, Washington, D.C. 20510; and the Honorable Thomas S. Foley, Speaker of the United States House of Representatives, Washington, D.C. 20515; and be it further

RESOLVED, That a copy of this Resolution be forwarded by the Department of Legislative Reference to the Maryland Congressional Delegation: Senators Paul S. Sarbanes and Barbara A. Mikulski, Senate Office Building, Washington, D.C. 20510; and Representatives Royden P. Dyson, Helen Delich Bentley, Benjamin L. Cardin, C. Thomas McMillen, Steny H. Hoyer, Beverly B. Byron, Kweisi Mfume, and Constance A. Morella, House Office Building, Washington, D.C. 20515; and be it further

RESOLVED, That a copy of this Resolution be forwarded by the Department of Legislative Reference to the following members of the Congress of the United States: Senator David Pryor, Chairman of the Special Committee on Aging of the United States Senate; and Representative Jack Brooks, Chairman of the Subcommittee on Economic and Commercial Law, Representative John Dingell, Chairman of the House Energy and Commerce Committee, and Representative Fortney Stark, Chairman of the Subcommittee on Health, all of the United States House of Representatives.

While the Governor's staff worked on the Executive Order we concentrated on trying to defeat Senate Bill 658 (Prescriptions—Controlled Substances—Triplicate Prescription Blanks) in the Senate. In response to our efforts and others, this legislation was stripped of the triplicate prescription proposal by the Senate Economic and Environmental Affairs Committee, and S.B. 658 was passed into the House as a Drug Utilization Review bill. The House Environmental Matters Committee never voted on S.B. 658 because the Governor signs this Executive Order. Although the Governor's Executive Order is very non-specific in its description of how his plan will work, the Governor has indicated that triplicate prescriptions will not be included. We were very successful in this matter because we protected our pharmacists from the implementation of triplicate prescriptions.

A bill summary of all the bills which we worked on follows, with the caveat that the Governor must sign or veto bills which have passed both houses.

H.B. 67, Residential Services Agencies, sponsored by Del. Lamotte. FINAL STATUS: PASSED BOTH HOUSES. MPhA POSITION: SUPPORT WITH AMENDMENTS. The Association does not advocate dual licensure for all pharmacies, however H.B. 67 with amendments will allow those pharmacies that do home I.V. therapy to become a residential service agency.

H.B. 499 and S.B. 387, Health Insurance—Mandated Health Insurance Benefits—Evaluation, sponsored by the Speaker and the President. FINAL TATUS: BOTH BILLS PASSED BOTH HOUSES. MPhA POSITION: SUPPORT WITH AMENDMENTS. These bills create a panel to examine existing and proposed mandated benefits and to report its recommendations to the Governor and to a legislative policy committee for consideration before each session of the General Assembly.

H.B. 683 and S.B. 714, Nurse Midwives—Prescribing and Dispensing, sponsored by Del. Felling and Sen. Hollinger respectively. FINAL STATUS: BOTH BILLS PASSED BOTH HOUSES. MPhA POSITION: SUPPORT. These bills specify that the practice of nurse midwifery includes the prescribing of certain substances, and that the practice of nurse midwifery only allows for dispensing in public health non-profit clinic situations.

H.B. 799, Physicians—Referral of Patients—Prohibition, sponsored by Del. Clark. FINAL STATUS: UNFAVORABLE. MPhA POSITION: SUPPORT. Initially, this bill would have prohibited physicians from referring a patient or directing an employee of the physician to refer a patient to a health care service in which the physician, the physician's immediate family, or the physician in combination with the physician's immediate family owns a significant beneficial interest. The bill was amended in the house to require that physicians could have an interest in a health care service as long as they disclosed their ownership and provided their patient with the names of two other providers of that service. The bill was defeated in the Senate Economic and Environmental Affairs Committee.

H.B. 845, Shoplifting and Employee Theft—Civil Liability and Penalties, sponsored by Del. Masters. FINAL STATUS: UNFAVORABLE. MPhA POSITION: SUPPORT.

H.B. 1191 and S.B. 715, Health Occupations—Prescribers of Medicine, sponsored by Del. Felling and Sen. Hollinger respectively. FINAL STATUS: BOTH BILLS PASSED BOTH HOUSES. MPhA POSITION: SUPPORT. These emergency measures are necessary to protect the fact that pharmacists have been dispensing medication prescribed by nurse practitioners for the last ten years.

H.J. 9, Pharmaceutical Manufacturers—Discriminatory Pricing Practices, sponsored by Del. Elliott. FINAL STATUS: PASSED BOTH HOUSES. MPhA POSITION: SUPPORT. House Resolution 9 will urge the President and the Congress of the U.S. to investigate the effects of discriminatory pricing practices on the prices paid by consumers of prescription drugs and to take the action necessary to ensure that discriminatory pricing practices do not result in cost shifting to retail pharmacies and higher prices for consumers. The passage of this resolution can be directly attributed to the efforts of our association.

S.B. 129, State Board of Pharmacy—Continuing Education, sponsored by Sen. Blount. FINAL STATUS: PASSED BOTH HOUSES. MPhA POSITION: SUPPORT. S.B. 129 will allow the State Board of Pharmacy to waive certain continuing education requirements.

S.B. 153, Health Occupations Boards—Administrative and Judicial Review, sponsored by Sen. Blount. FINAL STATUS: UNFAVORABLE. MPhA POSITION: OPPOSE. S.B. 153 would have allowed the State Board of Pharmacists to appeal any decision that reverses or modifies their orders.

S.B. 584, Public Health—Medical Records—Confidentiality, sponsored by Sen. Hollinger. FINAL STATUS: PASSED BOTH HOUSES. MPhA POSITION: SUPPORT.

S.B. 585, Health Care Practitioners—Referral of Patients, sponsored by Sen. Hollinger. FINAL STATUS: HELD IN HOUSE ENVIRONMENTAL MATTERS COMMITTEE. MPhA POSITION: SUPPORT. S.B. 585 would have allowed health care practitioners to have substantial financial interest in certain health care services if they clearly disclose that ownership in their heath care service, and provide the patient with the name of one other provider of that same service.

S.B. 626, Health Insurance—Prepaid Limited Health Service Organizations, sponsored by Sen. Kasemeyer. FINAL STATUS: HELD IN HOUSE ECONOMIC MATTERS COMMITTEE. MPhA POSITION: OPPOSE. This bill would allow employers to carve out coverage for mandated health insurance benefits from the policies they offer employees, when that benefit is covered by a limited health service organization. Pharmacy was amended out of this bill in the Senate Finance committee.

S.B. 658, Prescriptions—Controlled Substances—Triplicate Prescription Blanks, sponsored by Sen. Lapides. FINAL STATUS: HELD IN HOUSE ENVIRONMENTAL MATTERS COMMITTEE. MPhA POSITION: OPPOSE. The infamous "trip scrip" bill which we later supported after the bill was amended to a Prescription Drug Utilization Review Program.

S.B. 670, Physicians—Patient Referral—Prohibition, sponsored by Sen. Dorman. FINAL STATUS: UNFAVORABLE. MPhA POSITION: SUPPORT. This bill would have prohibited physicians from referring a patient to health care service, when the physician receives, directly or indirectly, a rebate, refund, commission, unearned discount or profit, credit, or other unearned valuable consideration from the referral.

BMPA's successful annual banquet, March 11, 1990, honored attorney Joseph Kaufman for his continual support of and many contributions to Maryland pharmacists. Presiding were BMPA President Arnold Davidov, President-elect Phillip Marsiglia, and Treasurer Nathaniel Futeral.

Selected as the 1990 Honorary BMPA President, Dr. Peter Lamy of the University of Maryland School of Pharmacy receives a scroll of honor from President Davidov.

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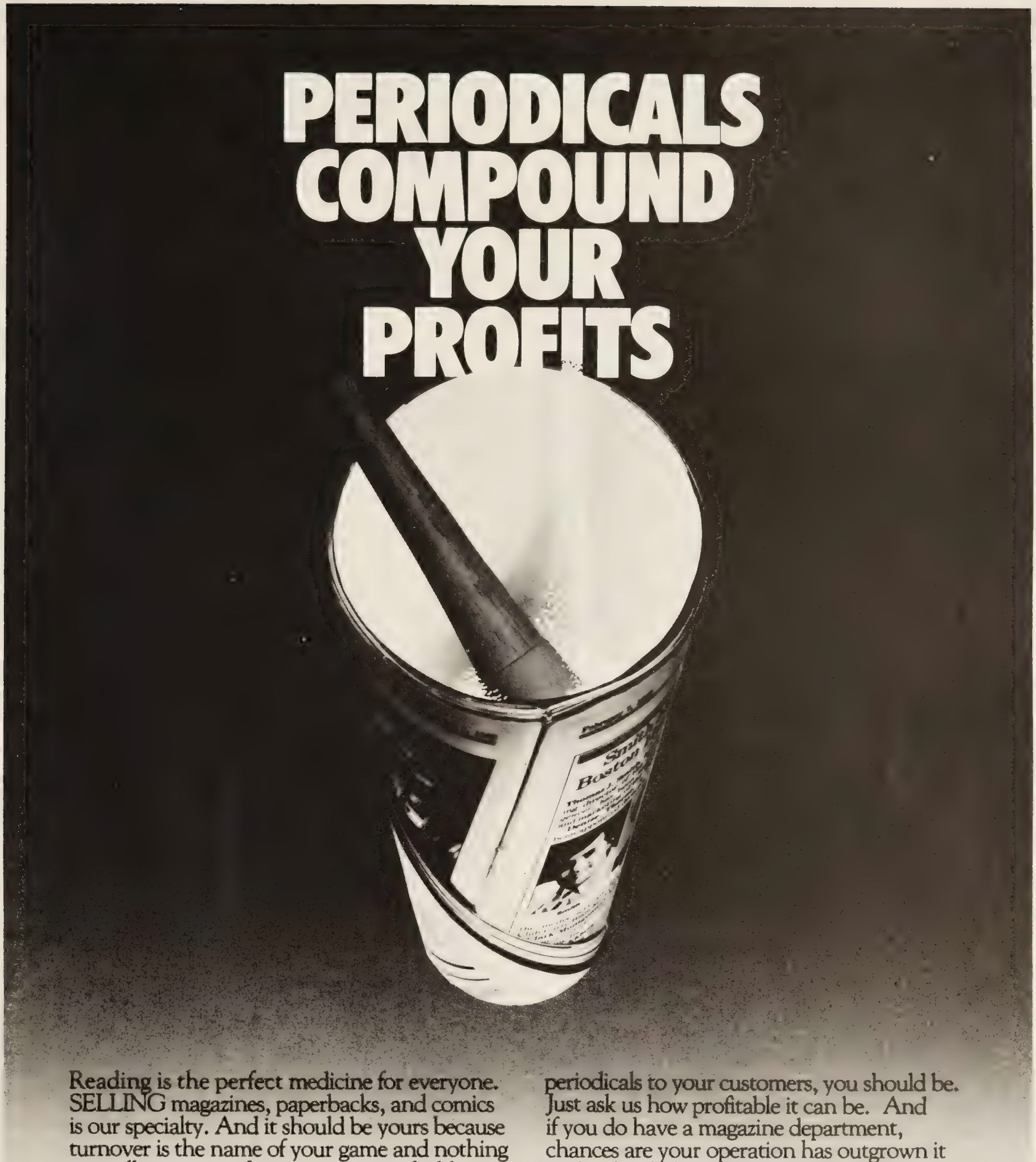

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Merck's Plan for Medicaid

Summary

America's health care cost problem has been felt no more acutely than in the nation's Medicaid program. Recently state Medicaid administrators unfortunately have been forced to make cuts in various services due to higher costs and status quo budgets. One particular target of budget-cutting over the past few years has been the prescription drug program. While most states still give physicians widespread freedom to prescribe the medicines of their choice, a significant minority have adopted—and others now are considering—restricted formularies or drug lists that deny Medicaid patients access to important medications.

In response to this problem, Merck Sharp & Dohme (MSD) has developed a program whose main objective is to enable Medicaid patients to receive medications as prescribed by their physicians. The program is called the Equal Access to Medicines Plan—reflecting the goal of ensuring that Medicaid patients can receive the same cost-effective medicines available to the general public. Where states are willing to reimburse for all current and future MSD single-source products without restrictions, MSD will offer the state its best (i.e. lowest) price for these products. The "best price" includes the Federal Government contract price, which has represented the only significant exception to MSD's equal access pricing policy. MSD will provide this best price by way of an equalization payment to state Medicaid programs. The payment will be based on the difference between the product's direct price to wholesalers and retailers and MSD's best price.

The Problem

The Medicaid program plays a critical national role in serving the health care needs of over 23 million needy Americans. Although the 1970s witnessed an expansion of Medicaid services, the late 1980s represented a period of retrenchment caused by the Federal deficit and tight state budgets. At the same time, the program now consumes about 12 percent of state budgets, ranking second only to education as a state priority. Total program costs have risen significantly, from $30 billion in 1982 to over $50 billion in 1989. Faced with rising costs and voters unwilling to accept new taxes, state Medicaid officials have looked for every opportunity to reduce expenditures and have increasingly focused on the prescription drug program.

The medications patients receive through the Medicaid program are invaluable in curing disease and saving lives. Constituting only 7 percent of Medicaid expenditures, the prescription drug program thus represents one of the most cost-effective services in Medicaid. The effectiveness of medications, however, depends on patients having access to them once the physician decides a certain course of drug therapy is appropriate.

But some states have implemented restrictive formularies that prevent patients from receiving needed medications by denying reimbursement, or by requiring cumbersome prior approval procedures. Also of concern in these states are the long delays before patients can obtain a new FDA approved product, which must also be approved for Medicaid coverage by the state. The increasing cost pressures have made it difficult for states with formularies to remove these restrictions even when policy-makers concur that a government formulary is unwise. In many states that allow open access, this principle has been threatened by calls for the creation of restrictive drug formularies. Nevertheless, there are three states—South Carolina, Utah and Louisiana—where state governments actually expanded access by removing formulary restrictions. They have done so in the conviction that open access to all FDA approved medicines will help ensure quality of care, preserve the physician's professional prerogatives, optimize the use of cost-effective medicines, and produce long-term savings in other health services.

The Underlying Concerns

The debate over the structure of Medicaid pharmacy programs has been fueled by several factors. First, though there is a general appreciation for the cost-effectiveness of medications, the prices of many products have recently risen faster than general inflation. Thus, while historically prescription drug prices lagged behind the CPI, the recent increases have led many states to implement or seriously consider "limiting access" to pharmaceuticals.

A second factor has been Medicaid policy-makers' recognition that often the prices paid by other government and non-government purchasers are lower than the prices reimbursed by Medicaid. Although these price differences have historically had sound business justifications, such as volume purchasing by large non-profit institutions, there is still the overriding sense that Medicaid programs for needy Americans deserve the best prices available in the marketplace.

The Equal Access to Medicines Plan

In order to encouage the continuation and adoption of open programs, MSD is implementing an "Equal Access to Medicines Plan." Simply stated, MSD will provide savings to state Medicaid programs reflecting its best prices for outpatient medications in return for physicians being able to prescribe all current and future

MDS single-source medications for their patients without confronting any formulary or prior approval restrictions. The savings would be provided in the form of an equalization payment made to the state Medicaid program on a quarterly basis, or less frequently if preferred by the state. It would be based on the MSD price for the product to wholesalers and retailers and the lowest price offered for common package sizes to any U.S. customer including the Federal Government.

The plan is simple, straightforward and fair to the Medicaid program. Despite our concerns regarding the reliability of Medicaid utilization data, Merck is prepared to implement this approach simply because the overriding issue of Medicaid patients having access to new medicines is much too important.

Nevertheless, because these conerns are legitimate where the reimburser does not directly purchase the product, Merck will work with state officials to arrive at a mutually agreeable procedure for assuring data accuracy prior to implementation of the program.

In addition to this basic framework, there are other specific points about the plan that are described below:

> *Timing:* The planned implementation data is on or after July 1, 1990, but the exact timing would depend on the status of any relevant legislation and discussions with officials in a given state.
>
> *Excluded Products:* The plan does not cover multi-source products, because they are already subject to state maximum allowable cost limits or Federal upper payment limits based on low-cost generic products. Multi-source drugs are, therefore, already available to Medicaid patients. Additionally, the program does not apply to vaccines for which MSD already provides discounts to the Centers for Disease Control and which are not customarily reimbursed as outpatient medicines.
>
> *Calculation of MSD's Best Price:* The best or lowest price will be the lowest price charged any customer, includng free goods or volume discounts, and will be based on commonly purchased package sizes and not bulk packaging arrangements. The best price will be adjusted to take into account the 2% discount pharmacists receive from MSD for prompt payment. Virtually all do earn it, and it would be unfair to MSD to provide this discount twice, once to pharmacists and once to the state.
>
> *Methods for MSD Payment Calculation and Data Verification:* MSD will calculate the equalization payment based on our prices at the relevant point in time and the state's utilization data. The price calculation will be subject to an audit by a mutually agreed upon independent auditor.

The MSD plan is being implemented in order to provide Medicaid patients access to all MSD prescription drugs. Therefore, in closed or restrictive formulary states, we will provide our best prices if the state reimburses for all MSD single-source products. In those states that already have open formularies, MSD will offer our "best price" as long as they continue to operate an open formulary. In no case will MSD support any proposal that will exclude the products of its competitors, since our overriding objective is to assure patients' equal access to medicines regardless of their source.

Benefits to the Medicaid Program

The Merck plan will yield significant medical and fiscal benefits for state Medicaid programs. In cases where products are not currently covered, the state and Medicaid patients will benefit from now having access to the therapeutic advances of Merck products. Where MSD products are in fact currently covered, patients will have greater assurance that their medical benefits will continue to be available and not restricted due to budget cuts. Additionally, the savings made possible through this program are projected to be in the millions of dollars. It should be noted that most states already cover all of MSD's single-source products.

MSD Price Increases

Medicaid officials may be concerned about the impact of future price increases on the savings derived from the Merck plan. From 1973 to 1990, MSD prices have increased, on a cumulative basis, at about the same rate as overall inflation during this period. In issuing its new price catalog on April 1, MSD reported price increases that were within the rate of inflation. The full impact of these increases will result in an estimated 4.7% average price increase for 1990. This follows a similar increase for 1989. These increases approximate the general CPI at a time when Merck's research costs continue to climb by 10% or more, reaching $855 million in 1990.

MSD will strive to continue this historical trend in the future, given stable market conditions, supportive government policy and a general climate of open access to Merck's new drugs.

Conclusion

Merck's Equal Access to Medicines Plan represents a challenging initiative to enhance Medicaid patients' access to the fruits of biomedical research, while helping states address their fiscal challenges. The plan reflects a partnership that is fair to both MSD and the states. Fairness to the states is embodied in the fact that they receive the best price available without sacrificing the principle of access. MSD benefits because its products are not barred from use through various restrictive formularies. The public benefits because this helps maintain important research so critical to future health care. However, the most important benefit is to the poor who are in need of health care through the Medicaid program. The plan helps ensure that these patients will receive the drug therapy that their physicians think is best for their health problems.

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Benzodiazepine Use and Abuse

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Addiction Research Center

The benzodiazepines have occupied a prominent place in pharmacotherapeutic practice almost since their introduction. These compounds are widely prescribed in the treatment of anxiety and insomnia, are used in the induction of anesthesia and in the treatment of numerous physical diseases, especially disorders of the circulatory and musculoskeletal system. Since their introduction, the prescribing of benzodiazepines increased throughout the 1960's until the mid 1970's. At the time of the most extensive use of benzodiazepines, there were heightened concerns regarding potential drug dependence problems associated with benzodiazepine use, culminating in U.S. Senate proceedings. In the years that have followed, benzodiazepine use has decreased to some extent and has become relatively stable. Even after the heightened concerns of the mid 1970's questions remain regarding whether this relatively widespread use is a reflection of relatively widespread need for these medications or of widespread abuse, over-prescription or misuse.

The present essay will examine benzodiazepines with regard to issues surrounding abuse and misuse, and importantly the potential of these drugs to produce psychological and physiological dependence. This is intended not as a comprehensive review of the relevant literature, but as an attempt to summarize the state of knowledge from experimental pharmacology and epidemiology, especially as it relates to issues relevant to the pharmacist.

Terms such as abuse, misuse, and drug dependence can carry with them several connotations. Therefore, it is appropriate to initiate this discussion with some clarification of meanings. Most current conceptions of drug abuse, including that of the World Health Organization (1), indicate that a drug is abused if it produces dependence (either psychological or physiological) in conjunction with a capacity to induce behavioral changes that are in some way detrimental to the individual or his social environment. Physiological dependence indicates a state of the organism such that discontinuation of drug treatment results in a time-limited withdrawal reaction that can be reversed by the resumption of treatment. With many drugs these reactions are manifest as rebound reactions, though they need not be opposite to the initial effects of the drug in order to be genuine withdrawal reactions.

One important and complicating feature of physiological dependence is that, in order to determine whether it exists, drug treatment must cease in order for the syndrome to unfold. Another complication in the assessment of withdrawal from benzodiazepines is that the signs and symptoms may closely resemble those, such as anxiety or insomnia, that originally prompted treatment. The reappearance of these original signs and symptoms can be mistaken for a withdrawal reaction.

The behavioral phenomena associated with abuse liability have motivated the use of various terms such as psychological dependence. The various associated psychological concepts include vague and scarcely quantifiable associations with aspects of the individual's experience, personality, or motivations that are difficult to objectively submit to pharmacological study. However, one central and objective component of all such concepts is that behavior is directed at seeking, procurement, and taking of drugs. The experimental pharmacology of abuse liability has concentrated on quantification of these behaviors themselves, since they can be directly observed and experimentally manipulated in order to determine the factors which influence them. The evaluation of the behavioral aspects of addiction took great strides with the development of objective techniques for evaluating drug-taking behavior. These techniques have provided a conceptualization of psychological dependence as an ordinary behavioral process in which drugs function as reinforcers (or rewards) that increase the likelihood of subsequent episodes of drug taking.

Although it is clear, in certain individual cases, that drug-taking has produced effects detrimental to the individual or his social environment, it is often difficult to make such a judgment objectively. Under many circumstances of drug-taking, value judgments come into play, rendering assessments of abuse liability problematic and perhaps most appropriately the purview of sociologists and social workers rather than pharmacologists. Studies of the effects of drugs on psychomotor performance, or on skills related to driving, have objectively evaluated this aspect of abuse liability in a restricted sense. These studies have been reviewed previously within the context of evaluation of abuse liability (2), and will not be examined here.

ASSESSMENTS OF PSYCHOLOGICAL DEPENDENCE

Studies of psychological aspects of drug abuse in human subjects often assess some subject-reported measures that assess the degree to which these drugs produce euphoria or some other type of positive subjective response to drug administration. However, it is not appropriate to regard results of these assessments of subjective effects of drugs interchangeably with results of studies that directly assess the reinforcing effects of drugs. The important psychological aspect of drug dependence is ultimately whether drug-taking or drug-seeking behavior occurs (if a subject reports liking a drug but does not actively seek the drug, does it matter?).

Different studies of the reinforcing effects of benzodiazepines have examined different subject populations. On the one hand are studies of subjects with histories of abuse of sedative/hypnotic drugs. These studies have demonstrated modest reinforcing effects of diazepam (at a dose of 20 mg) and preference of diazepam (200 mg) over placebo when subjects are given a blind choice between color coded capsules. Then these same studies are conducted with a choice between diazepam and an equally effective dose of pentobarbital, the barbiturate was chosen almost exclusively (3, 4).

Studies of volunteers with no appreciable history of drug abuse have also been conducted. In these studies there has been little evidence that these compounds will be chosen over placebo. At the lowest dose of diazepam (2 mg), there was no preference between the diazepam and placebo capsules. At higher doses (5 and 10 mg), the placebo capsule was chosen more often than diazepam (5). Similar results have been obtained with other benzodiazepines, including lorazepam and flurazepam (for a review, see reference 2).

Questions of why there are differences in results with normal subjects and subjects with a history of sedative abuse have not as yet been adequately answered. Several studies have attempted to answer these questions. Neither subject selected for high scores on anxiety scales nor older subjects preferred diazepam to placebo. Time of day of administration did not significantly increase the choice of diazepam over placebo. In a post-hoc examination of the few individuals who did choose diazepam over placebo, it appeared that these individuals were less sensitive to the subjective effects of the drug. In particular, diazepam decreased Arousal and increased Fatigue Subscales of the Profile of Mood States (POMS) in subjects who did not choose diazepam, and had no effect on these measures in subjects that chose the drug. Additionally, the subjects who did not choose diazepam generally scored higher on sub-scales of Vigor, Friendliness and Elation (6). One study found a greater degree of diazepam taking in normal volunteers than previous studies (6). In that study subjects were allowed to take any number (up to seven) of 4 mg doses of diazepam. In addition, subjects were tested in groups and were acquainted prior to the study. Finally, all of the subjects received drug at the same time. In these studies diazepam was chosen on 67 per cent of the occasions and subjects took approximately 16 to 18 mg of the drug. It is unclear which of the unique features of this procedure contributed to the increase in drug taking behavior.

Another study from the same laboratory compared choice of diazepam in subjects classified as moderate and light drinkers of alcoholic beverages (6). Moderate consumers of alcohol were classified as those that consumed 1) at least seven alcoholic drinks per week, 2) at least three drinks on a single occasion at least once per week, or 3) alcohol on at least four days of the week. These subjects were allowed multiple diazepam ingestions, as in the study described above. In contrast to results obtained with light drinkers, all of the moderate drinkers chose diazepam on all occasions when it was available. These subjects self-administered an average dose of 25.2 mg per experimental session.

In summary, studies of reinforcing effects in drug-abusing populations indicate a modest reinforcing effect of diazepam at doses well above the therapeutic dose range. This reinforcing effect is clearly less pronounced than that obtained with pentobarbital. Further, comparable results are not obtained in normal populations nor in populations of anxious subjects. These results suggest that it is unlikely that use of these drugs in anxious subjects is associated with a significant risk of drug abuse. The primary factor that appears to predispose towards increased risk of abuse of benzodiazepines is a history of sedative abuse, or a tendency to consume more than occasional alcoholic drinks. Studies with animal subjects have indicated a similar predisposition (7). As in human sedative abusers, in animal subjects barbiturates are more readily self-administered than are benzodiazepines (8). These data suggest consistent differences between these classes of drugs and differences between subjects with drug abuse histories and subjects without those histories that should be considered in any assessment of abuse liability of therapeutically useful medications.

EPIDEMIOLOGIC DATA REGARDING BENZODIAZEPINE ABUSE

How does all of the forgoing relate to actual patterns of drug use. If we are to consider the laboratory evidence as meaningful, it should be reflected in low levels of actual benzodiazepine abuse in the population as a whole. Given the amount and type of coverage of this issue in the popular press, one might conclude just the opposite. Therefore, it seems germane to examine the epidemiology of benzodiazepine use in some detail. As will be seen, these studies indicate that the scientific literature on actual drug utilization is inconsistent with the conceptions promoted in the popular press.

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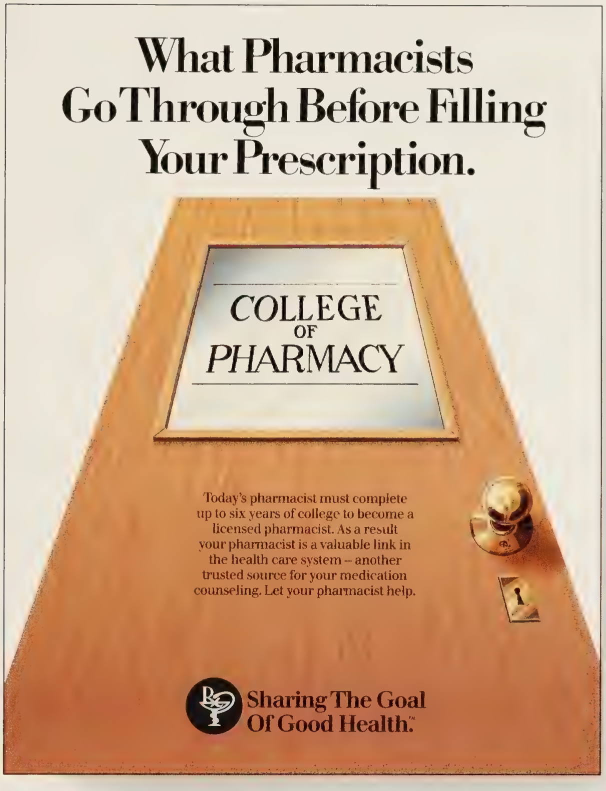

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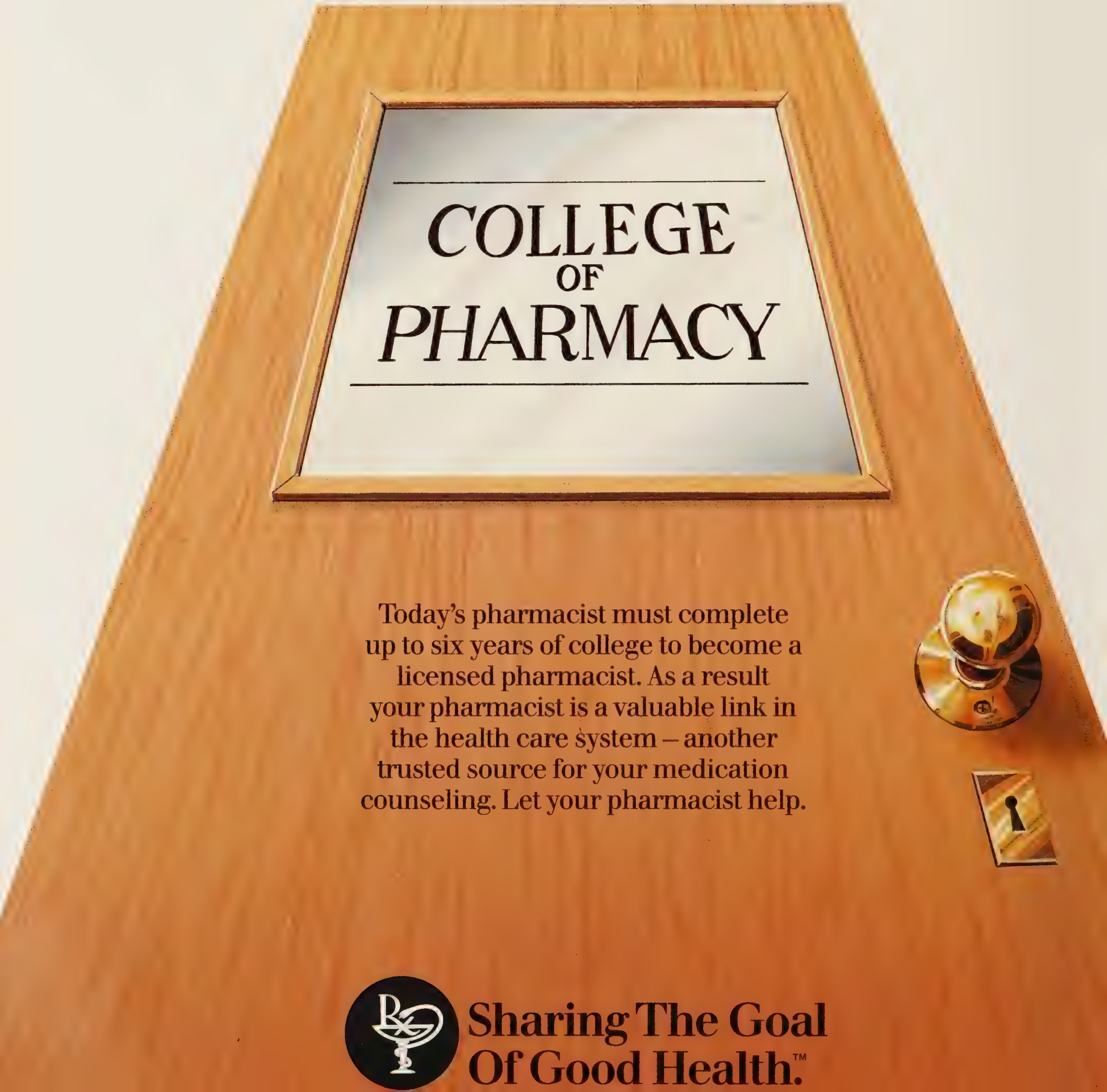

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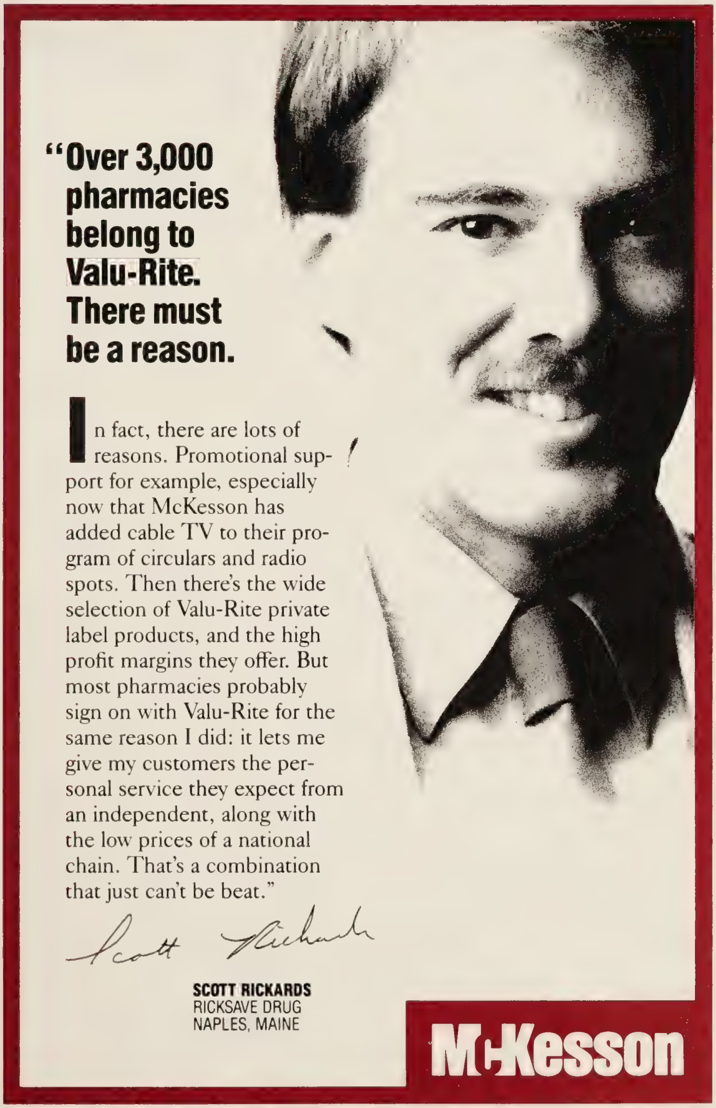
ducted in 1981, Mellinger and Balter (9) found that 2% of men and 2.3% of women reported that they had used an antianxiety drug obtained without a prescription within the past year. An additional 0.4% of men and 0.9% of women reported similar use of hypnotic medication. However, only 0.1% of the population reported such misuse for a total of 30 days or more during the year. The U.S. National Institute on Drug Abuse survey of nonmedical drug use among youth in 1987 (10) found that use of tranquilizers within the last year was reported by 5.1% of young adults (those who had graduated from high school 1 to 8 yrs previously). There was virtually no reported nonmedical use of tranquilizers on a daily basis. The National Household Survey on Drug Abuse, also sponsored by NIDA, found in 1985 that 4.8% of the population between 12 and 17 yrs of age, 12.0% of those between 18 and 25 yrs, and 7.1% of those 26 yrs or older reported ever having used tranquilizers nonmedically (11).

Studies of drug abusers have generally reported higher levels of benzodiazepine use. For example, a high percentage of methadone patients report use of diazepam (12); similarly, diazepam-positive urines have been detected in from 5 to 70% of methadone patients (e.g. 13, 14). A high percentage of patients admitted to alcohol detoxification programs also report use of benzodiazepines (e.g. 15).



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Scott Rickards

SCOTT RICKARDS
RICKSAVE DRUG
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There are very few prospective epidemiological studies of drug use. A series of studies in Sweden (16, 17) examined psychotropic drug purchases over a five-year period. Most individuals significantly decreased these purchases over time. However, 0.6% of 2,566 patients developed regular purchase patterns, and 0.0015% of these patients exhibited patterns indicative of overuse or abuse.

Thus, epidemiologic studies are generally consistent with experimental studies of the reinforcing effects of benzodiazepines. These studies together suggest that misuse and abuse of benzodiazepines in the general population is trivial. The misuse or abuse of these drugs are more prevalent in populations of drug abusers, including alcoholics and methadone patients.

LONG-TERM USE OF BENZODIAZEPINES

While most patients on benzodiazepines are not at significant risk of psychological dependence, epidemiologic research indicates that an appreciable proportion of patients using benzodiazepines, or using any sedatives for that matter, tend to continue taking these drugs for long periods of time. The prevalence and patterns of use of anxiolytic drugs, chiefly benzodiazepines, were studied in a 1981 survey of national samples of the adult populations of 10 Western European countries and the United States (18). The study found that an average of 12.5% of these populations reported having used anxiolytics within the prior 12 months. Most users (in all countries surveyed, except Belgium) reported that they had used these drugs on a regular basis only for short periods, i.e. less than a month at a time; however, an average of 19% of users (2.4% of the population) reported daily use for 12 months or longer. In the United States, 12.9% of the population had used anxiolytics over the past year, of whom 14.2% reported regular daily use for 12 months or longer; this amoutns to about 1.8% of the national population (18).

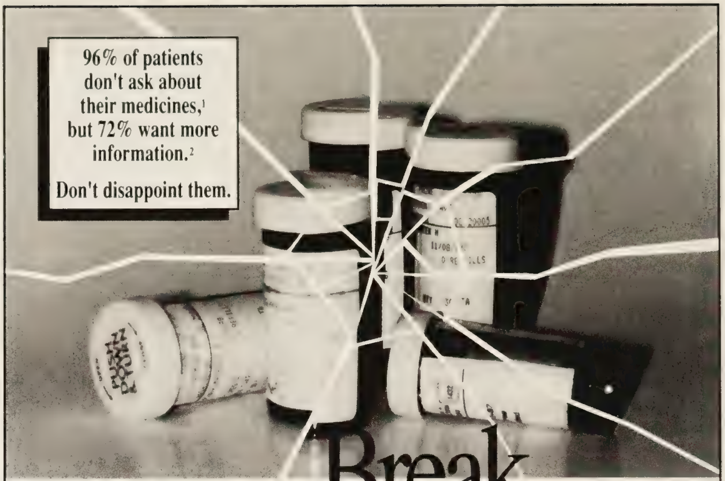
The long-term users tend to be older; 71% were 50 or older, and they are much more likely to have multiple somatic health problems, which were often chronic. Accordingly, they were also much more likely than other users to have visited physicians frequently in the previous year; and 69% reported that they had discussed their use of anxiolytic medication with their physicians within four months of their last use of this medication (19). While these are not the demographics usually associated with drug abusers, the epidemiologic data indicate that among the chronic users, that concern regarding the development of physiological dependence to these drugs is not entirely misplaced.

PHYSIOLOGICAL DEPENDENCE TO BENZODIAZEPINES

Many of the initial experimental studies were directed at questions of whether physiological dependence develops, and, only later, whether it develops at therapeutic doses. Accordingly, initial studies were conducted in which relatively high doses of these drugs were administered for relatively long periods. For example, early studies established that physiological dependence can develop in humans taking high doses of benzodiazepines (20). Less severe withdrawal symptoms have been reported in subjects receiving daily therapeutic doses for prolonged periods (e.g. 21, 22). Withdrawal signs and symptoms typically include alterations in sensations of taste and smell, jitteriness, and tremor; these effects may be uncomfortable but are usually not severe, nor are they likely to be associated with serious medical or psychiatric sequelae. Withdrawal symptoms may also include increased anxiety and insomnia; these symptoms may be difficult to distinguish from the conditions that originally prompted treatment. Further, these symptoms may render patients reluctant to discontinue medication.

The most unequivocal information on the development of benzodiazepine dependence to therapeutic doses has come from experimental, placebo-controlled studies. In these studies, subjects are stabilized on a known dose of anxiolytic medication; then half of the subjects are changed to placebo, while the remainder are maintained at the same dose. In two studies of this kind (23, 24), withdrawal signs and symptoms were not greater in subjects receiving placebo compared to subjects that continued receiving their anxiolytic medication. In other studies, however, withdrawal signs and symptoms were observed in subjects who were switched from anxiolytic medication to placebo. For example, Tyrer et al. (25) reported withdrawal in subjects receiving diazepam (average 10 mg/day) or lorazepam (4 mg/day). Although several of the patients dropped out of the study (presumably due to the withdrawal reaction), 27% of those remaining experienced withdrawal. Other studies have reported withdrawal in some proportion of patients following termination of oxazepam or halazepam (26), bromazepam or diazepam (27), alprazolam (28, 29) and clorazepate (30).

Studies that have examined withdrawal in patients referred for assistance in withdrawing from their benzodiazepine medication apparently select dependent patients. These



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[1] FDA survey, "Patient Receipt of Rx Drug Information", 1983

[2] A Study of Attitudes, Concerns, and Information Needs for Rx Drugs and Related Illnesses, CBS Television Network Consumer Model Survey, 1983

studies pose several important questions regarding benzodiazepine withdrawal since it is not clear how representative these results may be. Clearly, other studies in which subjects were selected differently did not show the same incidence of withdrawal reactions. Rickels et al. (31) found that the risk of developing mild dependence at therapeutic doses of benzodiazepines was virtually non-existent for the first six weeks of treatment. There was a slightly increased risk between three and eight months, and a considerably greater increase beyond that. Additionally, concurrent use of ethanol and anxiolytic medication was very likely to increase the chances of developing physiological dependence.

In summary, these studies indicate that the degree of dependence depends on the treatment dose as well as the duration of treatment. Dependence can develop to therapeutic doses of benzodiazepines but does not appear to do so in all patients. Prior or concomitant use of alcohol or other drugs may increase the likelihood of dependence to benzodiazepines.

SUMMARY and CONCLUSIONS

The incidence of long-term use of benzodiazepines and the experimental pharmacology and epidemiology suggests that long term use of these drugs is due to their continued efficacy. Alternatively, a substantial proportion of long-term use may be based on the development of physiological dependence rendering patients unwilling to stop taking their medication, even after they have ceased deriving any benefit from it. It is currently unclear which of these alternatives is most representative. There are discrepant findings with respect to the long-term effectiveness of benzodiazepine treatment. Some studies (e.g., 22, 32, 33) have indicated that tolerance develops to the anxiolytic effects of the drugs; other studies (34, 35) have found no such tolerance.

What is the significance of the physiological dependence that can develop with long-term use? With respect to abuse liability, this dependence in itself does not appear to represent a significant risk, since it is not likely to be accompanied by inappropriate patterns of use, such as increasing doses; indeed, some of the studies documenting therapeutic-dose dependence have indicated that dependent patients are likely to want to reduce or terminate their use of benzodiazepines (2). Whether to withdraw long-term users from their benzodiazepine medication is a cost benefit decision which must be made by the physician in close consultation with the patient and possibly his family. There is also no evidence that physiological dependence to therapeutic doses is accompanied by increased risk of adverse clinical effects, apart from the risk of withdrawal if the patient abruptly discontinues the medication. Thus, although a number of professionals have appeared to take the discovery of therapeutic-dose dependence in itself as a motivation to discontinue long-term benzodiazepine treatment, it is not at all clear that this is always appropriate.

This is not to say that long-term use of benzodiazepines does not need to be monitored. Since the risk of psychological dependence increases with the duration of use, physicians should reassess the need for continued medication at regular follow-up consultations in the course of benzodiazepine treatment. If the patient or physician is particularly concerned about the risk of dependence, it may be appropriate to schedule "drug holidays," in which drug administration is discontinued for two weeks or more, both to reduce the risk of dependence and to reassess the need to continue treatment.

The termination of drug treatment is a decision that must be made after the patient and the physician evaluate the costs and benefits. Included in that assessment should be an evaluation, to the best of the physician's ability, of the health consequences of untreated anxiety. Far too little is currently known about these consequences (36).

When the decision is reached to terminate benzodiazepine treatment, the risk of withdrawal can be minimized by prescribing a regimen of gradual reductions in dosage. In patients receiving benzodiazepine hypnotics with short half-lives, who may be at risk of rebound insomnia or early-morning awakening as early symptoms of withdrawal, it may be possible to recuce this risk by changing from a short- to a long-acting benzodiazepine hypnotic before terminating treatment. In addition, this discontinuation must be done with appropriate counseling so that the patient is aware of the syndrome that may unfold and its predicted time course. This can be a difficult time for the anxious patient which is most readily accomplished with the appropriate support mechanisms provided by the therapeutic community (the physician as well as the pharmacist), and the patient's family.

Recently, the Council of the Royal Pharmaceutical Society has issued a statement (37) advising pharmacists who receive medium or long-term prescriptions for benzodiazepines to counsel the patient about the risks of dependence, without undermining the patient's confidence in his doctor. Despite the best intents of that proposal, this course of action by the pharmacist is ill-advised. First, counseling on the health risks of prescribed medication by a third party must be exceedingly delicate in ordr to leave the patient's confidence in his physician unharmed. Additionally, an ill-timed suggestion to the patient may precipitate an unsupervised withdrawal episode that proceeds without appropriate dose tapering (38).

In the current climate there are several influences that curtail benzodiazepine prescribing. For example, fear of liability from litigation due to iatrogenic dependence combined with the sometimes vague, though legitimate, indications for treatment may render physicians relatively conservative in their prescribing practices. A conservative posture may deprive patients of appropriate treatment. Further, there are regulatory trends which may render physicians even less likely to prescribe benzodiazepines. For example, despite opposing litigation New York state has imposed a strict prescription control system for benzodiazepines which treats these drugs equivalently with Schedule I compounds. This regulation was promulgated despite the controversial nature of the scientific evidence claimed by the state to justify this regulation, as well as claims of plaintiffs (a patient, two physicians, a pharmacist, several pharmaceutical firms, and the Medical Society of the State of New York) that the real rationale for the regulation was to impose a reduction in benzodiazepine sales which would result in a corresponding decrease in Medicaid expenditures.

A balanced and coordinated approach to curtailing dependence on benzodiazepines is necessary. Communication between the physician and patient is important. Communication between the physician and the patient's family can also be important. Communication between the pharmacist and the physician can also be beneficial. The pharmacist may be able to provide the physician with information to which he otherwise has no access. For example, concurrent use of other hypnotic/sedative drugs or other indications of sedative drug abuse. Coordinated efforts within the therapeutic community are the best approaches to limiting prescription drug misuse when it occurs.

REFERENCES

1. World Health Organization: Convention on Psychotropic Substances, Publication E/CONF. 58/6, United Nations, 1971.
2. Woods, J. H., Katz, J. L., and Winger, G.: Abuse liability of benzodiazepines. Pharmacol. Rev. 39:251–419, 1987.
3. Griffiths, R. R., Bigelow, G., and Liebson, I.: Human drug self-administration. Double-blind comparison of pentobarbital, diazepam, chlorpromazine and placebo. J. Pharmacol. Exp. Ther. 210:301–310, 1979.
4. Griffiths, R. R., Bigelow, G. E., Liebson, I., and Kaliszak, J. E: Drug preference in humans: double-blind choice comparison of pentobarbital, diazepam, and placebo. J. Pharmacol. Exp. Ther. 215:649–661, 1980.
5. Johanson, C. E., and Uhlenhuth, E. H.: Drug preference and mood in humans. Diazepam. Psychopharmacol. 71:269–273, 1980.
6. Johanson, C. E., and De Wit, H.: The use of choice procedures for assessing the reinforcing properties of drugs in humans. National Institute on Drug Abuse Research Monograph #?, DHHS Publication (ADM)89-????, pp. ??-??, U.S. Government Printing Office, 1989.
7. Bergman, J., and Johanson, C. E.: Reinforcing properties of diazepam under several conditions in the rhesus monkey. Psychopharmacology 86:108–113, 1985.
8. Griffiths, R. R., Lukas, S. E., Bradford, L. D., Brady, J. V., and Snell, J. D.: Self-injection of barbiturates and benzodiazepines in baboons. Psychopharmacology 75:101–109, 1981.
9. Mellinger, G. D., and Balter, M. B.: Psychotherapeutic drugs: a current assessment of prevalence and patterns of use. In Society and Medication: Conflicting Signals for Prescribers and Patients, ed. by J. P. Morgan and D. V. Kagan, pp. 137–144, D. C. Heath and Co., Lexington, KY, 1983.
10. Johnston, L. D., O'Malley, P. M., and Bachman, J. G.: Illicit Drug Use, Smoking, and Drinking by America's High School Students, College Students, and Young Adults: 1975–1987. DHHS Publication (ADM)89-1602, 307 pp., USPHS, Rockville, MD, 1988.
11. National Institute on Drug Abuse: National Household Survey on Drug Abuse: Main findings, 1985. DHHS Publication (ADM)88-1586, 173 pp., USPHS, Rockville, MD, 1988.
12. Woody, G. E., Mintz, J., O'Hare, K., O'Brien, C. P., Greenstein, R.A., and Hargrove, E: Diazepam use by patients in a methadone program--how serious a problem? J. Psychedelic Drugs. 7:373–379, 1975.
13. Budd, R. D., Walkin, E., Jain, N. C., and Sneath, T. C: Frequency of use of diazepam in individuals on probation and in methadone maintenance programs. Am. J. Drug Alcohol Abuse 6:511–514, 1979.
14. Kaul, B., and Davidow, B.: Drug abuse patterns of patients on methadone treatment in New York City. Am. J. Drug Alcohol Abuse 8:17–25, 1981.
15. Schuckit, M. A., and Morrissey, E. R.: Drug abuse among alcoholic women. J. Psychiatry 136:607–611, 1979.
16. Boethius, G., and Westerholm, B.: Is the use of hypnotics, sedatives and minor tranquilizers really a major health problem? Acta Med. Scand. 199:507–512, 1976.
17. Boethius, G., and Westerholm, B.: Purchases of hypnotics, sedatives and minor tranquilizers among 2,566 individuals in the county of Jamtland, Sweden: a 6-year follow-up. Acta Psychiatr. Scand. 56:147–159, 1977.
18. Balter, M. B., Manheimer, D. I., Mellinger, G. D., and Uhlenhuth, E. H.: A cross-national comparison of anti-anxiety/sedative drug use. Curr. Med. Res. Opin. 8(suppl4):5–18, 1984.
19. Mellinger, G. D., Balter, M. B., and Uhlenhuth, E. H.: Prevalence and correlates of the long-term regular use of anxiolytics. J. Am. Med. Assoc. 251:375–379, 1984.
20. Hollister, L. E., Motzenbecker, F. P., and Degan, R. O.: Withdrawal reactions from chlordiazepoxide ("Librium"). Psychopharmacologia 2:63–68, 1961.
21. Covi, L., Lipman, R. S., Pattison, J. H., Derogatis, L. R., and Uhlenhuth, E. H.: Length of treatment with anxiolytic sedatives and response to their sudden withdrawal. Acta Psychiatr. Scand. 49:51–64, 1973.
22. Maletzky, B. M., and Klotter, J.: Addiction to diazepam. Int. J. Addict. 11:95–115, 1976.
23. Bowden, C. L., and Fisher, J. G.: Safety and efficacy of long-term diazepam therapy. South. Med. J. 73:1581–1584, 1980.
24. Laughren, T. P., Battey, Y., Greenblatt, D. J., and Harrop, D. S., III.: A controlled trial of diazepam withdrawal in chronically anxious outpatients. Acta Psychiatr. Scand. 65:171–179, 1982.
25. Tyrer, P., Rutherford, D., and Huggett, T.: Benzodiazepine withdrawal symptoms and propranolol. Lancet: 520–522, 1981.
26. Pecknold, J. D., McClure, D. J., Fleury, D., and Chang, D.: Benzodiazepine withdrawal effects. Prog. Neuro-Psychopharmacol. Biol. Psychiatry. 6:517–522, 1982.
27. Fontaine, R., Chouinard, G., and Annable, L.: Rebound anxiety in anxious patients after abrupt withdrawal of benzodiazepine treatment. A. J. Psychiatry 141:848–852, 1984.
28. Pecknold, J. C., and Swinson, R. P.: Taper withdrawal studies with alprazolam in patients with panic disorder and agoraphobia. Psychopharmacol. Bull. 22:173–176, 1986.
29. Cohn, J. B., and Noble, E. P.: Effect of withdrawing treatment after long-term administration of alprazolam, lorazepam, or placebo in patients with an anxiety disorder. Psychopharmacology Bull. 19:751–752, 1983.
30. Rickels, K., Case, W. G., Schweizer, E. E., Swenson, C., and Fridman, R. B.: Low-dose dependence in chronic benzodiazepine users: a preliminary report on 119 patients. Psychopharmacol. Bull. 22:407, 1986.
31. Rickels, K. L., Case, W. G., Downing, R. W., and Winokur, A.: Long-term diazepam therapy and clinical outcome. J. Am. Med. Assoc. 250:767–771, 1983.
32. Hillestad, L., Hansen, T., and Melsom, H.: Diazepam metabolism in normal man. II. Serum concentration and clinical effect after oral administration and cumulation. Clin. Pharmacol. Ther. 16:485–489, 1974.
33. Hawthorne, J. W., Zabora, J. R., and Dlugoff, B. C.: Out-patient detoxification of patients addicted to sedative-hypnotics and anxiolytics. Drug Alcohol Depend. 9:143–151, 1982.
34. Hollister, L. E., Conley, F. K., Britt, R. H., and Shuer, L.: Long-term use of diazepam. J. Am. Med. Assoc. 246:1568–1570, 1981.
35. Lucki, I., Rickels, K., and Geller, A. M.: Chronic use of benzodiazepines and psychomotor and cognitive test performance. Psychopharmacology 88:426–433, 1986.
36. Pasnau, R. O.: Introduction: Consequences of anxiety. J. Clin. Psychiatry 49:10(Suppl), 1988.
37. Council Statement: Benzodiazepines. Pharm. J. 243:200, 1989.
38. Farid, B. T., and Bulto, M.: Benzodiazepine prescribing. Lancet III (8668):917, 1989.

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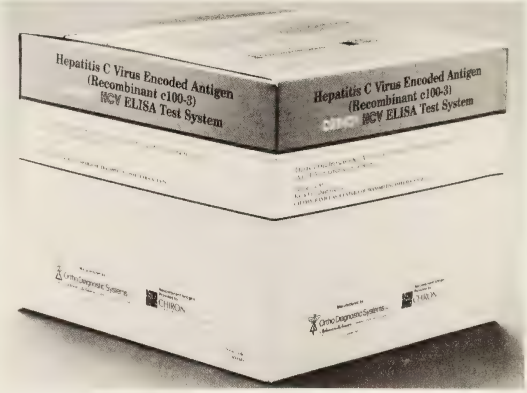
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Continuing Education Quiz

The Maryland Pharmacist **JUNE 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by September 30, 1990. A continuing education certificate for one contact credit will be mailed to you within 30 days. Please type or print clearly.

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Is this program used to meet your mandatory CE? [ ] Yes [ ] No

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Prickly Heat and Diaper Rash

1. The prickly heat condition characterized by flesh-colored papules that is often asymptomatic, and waxes and wanes with sweating, is best described as which of the following?
   a. Crystallina
   b. Erythematosus
   c. Profunda
   d. Rubra

2. The major cause of prickly heat rash is:
   a. bacterial invasion by staph organisms.
   b. localized contact dermatitis.
   c. obstruction of sweat gland openings.
   d. yeast invasion by Candidal organisms.

3. The household item that is best to recommend for soaking diapers to reduce the potential for diaper rash is:
   a. ammonia water.
   b. baking soda.
   c. milk.
   d. vinegar.

4. The prickly heat condition that occurs deep within the epidermis, and is the only form characterized by inflammatory lesions, is best described as which of the following?
   a. Crystallina
   b. Erythematosus
   c. Profunda
   d. Rubra

5. Anhidrosis is a condition characterized by:
   a. a staphylococcal infection.
   b. cessation of sweating.
   c. excessive ammonia in the urine.
   d. gooseflesh.

6. Which of the following are ammonia-liberating bacteria that are readily cultured from urine of infants with diaper rash?
   a. Brevibacteria
   b. Candida
   c. Propionibacteria
   d. Staphylococci

7. The synonym for prickly heat is:
   a. cutis anserina.
   b. diaper rash.
   c. eczema.
   d. miliaria.

8. A parent requesting an OTC topical diaper rash product in an ointment dosage form for her baby should be told about which of the following products?
   a. Balmex
   b. Desitin
   c. Mexana
   d. ZBT

9. The prickly heat condition characterized by the appearance of lesions filled with clear fluid that break down when scratched, is best described as which of the following?
   a. Crystallina
   b. Erythematosus
   c. Profunda
   d. Rubra

10. Which of the following organisms are most likely to cause an infection in an infant with diaper rash, if the skin's normal defenses are broken?
   a. Brevibacteria
   b. Candida
   c. Propionibacteria
   d. Staphylococci

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Commentary

As incoming president of the Maryland Pharmacists Association, I would like to pause and reflect on the accomplishments of the past year. I think that we can be proud of the final outcome regarding our new executive director, Dave Miller. With Dave, we have a very capable leader who comes with a great deal of knowledge of not only our strengths, but more importantly, what our weaknesses are. We can now proceed in a very positive way.

In the legislative, we were able to pass House Joint Resolution 9, which was introduced by pharmacist Delegate Don Elliott. We were also instrumental in casting a different light on the triplicate prescription issue that, in the end, lead to the defeat of this outdated bureaucracy.

When Blue Cross wanted to charge pharmacists an administrative fee of 30 cents, pharmacists from around the state took them to the insurance commissioner and not only had that charge reduced to 15 cents but had stated for the public record the validation of AWP as a basis of cost.

Medical Assistance, on a somewhat fresh approach, asked for and even accepted our arguments concerning what our revised professional fee should be if the State of Maryland is required to go to WAC (wholesale acquisition cost) plus 10 percent. This is in addition to the bolt of lightning that has struck many third-party administrators who have finally recognized that pharmacists are not the cause of the escalating cost of prescription drugs.

Increased membership, the lifeblock of our association, was a highlight, but we cannot stop with this. . . . we must continue to emphasize that you and your fellow professionals must support MPhA.

Last but not least, we continue to be a leader in continuing education programs as evidenced by the immense success of the Annual Convention and the Mid-Year Meeting. This year's Mid-Year was a problem—we had so many attendees wanting to hear the excellent program that we ran out of room! This shows how responsive MPhA has been to the needs of every pharmacist in Maryland.

In closing, I would like to give you this food for thought. We cannot predict the future, but we must be able to forecast it and with your help, that will be done. Have a wonderful summer!

Mark Levi, P.D.

MPhA President

Continuing Education

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Understanding OTC Home Testing Products: Part I

by J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

and

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

Goals

The goals of this lesson are to:

1. review the scope of home testing products;
2. present an explanation for their growing popularity; and
3. discuss uses and limitations of selected products.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from

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Objectives

At the conclusion of this lesson, participants should be able to:

1. select the uses, limitations, and causes of false-positive and false-negative results for products discussed;
2. choose pathological considerations when specific end points of home testing products are stated; and
3. demonstrate an understanding of specific advice to convey to consumers to assure that the products are used correctly.

Americans desire to take charge of their own health care needs. One subgroup of the explosive self-care movement is home testing products.

By 1987, sales were estimated to exceed $600 million annually, and were pushing toward $1 billion by 1990. They are projected to increase by approximately 20 to 25 percent annually, and could exceed $2 billion by the mid-1990s.

Most home testing products are sold in pharmacies. But supermarkets, department stores, health food outlets, and mail order businesses are rapidly eroding into this extremely fertile market.

This series of lessons is aimed at providing information that pharmacists can convey to consumers. There is no doubt that pharmacists are uniquely qualified to inform consumers on these products. Doing so may help prevent or at least minimize the impact of nonpharmacy outlets on this market.

The topics of diabetes urinalysis and blood glucose tests, pregnancy and ovulation kits, and fecal occult blood testing products have been covered in detail in other lessons in this series. In this article, other selected home testing products will be reviewed, including those for urine protein, pH, blood, bilirubin, urobilinogen, and phenylketones. Remaining miscellaneous products, and projections for the future will be discussed in Part II.

Background

In addition to the aforementioned tests, consumers can currently select OTC products to detect or monitor dozens of substances in their urine. They can confirm the status of diseases including asthma, urinary tract infections, and blood pressure. They can check their vision and hearing, and perform other important tests.

Home testing products have experienced a recent explosive growth and will continue to increase in number and importance (Table 1). However, not all medical practitioners view the self-use of home testing products to be in the best interest of their patients. Some are concerned about the seemingly uncontrolled development of home testing products. They are concerned with the danger of test results being misinterpreted. Following this thinking, they worry that patients may become too reliant on self-diagnosis and self-treatment, and will not seek proper diagnosis by a trained professional. This may worsen a serious disease which could have been prevented or lessened.

Other physicians feel that home testing agents enable people to become more intimately involved in their own health care. By doing so, they take better care of themselves and comply more completely with professional advice.

Home testing product manufacturers state that these items are not intended to replace professional diagno-

Table 1

Trends that favor development of home testing products
Advancements in biochemistry and biotechnology that have simplified testing procedures
Changing life styles; individuals want to be more self-reliant, and demand increased control over their own lives
Increased convenience and time savings for consumers
Increased medical costs; government cost-containing programs encourage earlier dismissal of patients from hospitals to their own homes
Aging population with its increasingly larger market for products
Regulatory environment that currently favors self-care product development

sis or care. Rather, they are to be used by consumers who wish to recognize certain medical conditions early so that they can then consult a physician. Manufacturers state that the tests help identify a condition, but do not provide sufficient information that can be used without physician interpretation. They are also intended to enhance compliance with physicians' prescribed regimens.

A medical marketing group has reported that most people who use home testing products do not have a physician they rely on regularly before using the products. This group suggests that after users conduct the tests and obtain results, they seek a physician for assistance. If this concept is correct, then these products may actually promote visits to physicians for proper health care.

OTC Urinalysis Tests

Protein. Protein is not readily excreted by the kidney of healthy patients and urine contains only a trace quantity. In fact, normal urine should show a protein reading of zero. Increased amounts of protein in the urine indicate the probability of renal disease.

None of the current OTC urine protein tests differentiate between the types of protein. Most often it will be albumin. However, any positive test for urine protein should be considered pathologic until proven otherwise.

Urinary testing for protein may be the most important initial test for detecting renal disease. Diseases which should be considered when high levels of protein in urine are found are summarized in Table 2.

There are currently two basic types of tests for urine protein: turbidimetric and colorimetric methods. While both are still used, colorimetric tests are more popular and provide the basis for most OTC products.

Colorimetric tests are founded on the "protein error of indicators" concept. If an indicator is added to a solution at a certain pH, a specific color will be noted. If protein is then added to the solution while maintaining the pH value, the color will change because of the presence of the protein. In other words, the presence of protein indicates an "error" in the indicator's usual behavior.

The indicator contained in most commonly used urine protein tests is tetrabromphenol blue. It changes from yellow to blue when protein is present. Albustix® is a commercial product that uses colorimetric changes to detect protein. It uses the indicator mentioned above and a citrate buffer to maintain pH 3.

This test has been shown to be quite accurate and has few limitations. False positive tests are noted in highly alkaline urine. Therefore, concurrent ingestion of sodium bicarbonate, thiazide diuretics, or carbonic anhydrase inhibitors (e.g., Diamox) can interfere with test results. Additionally, quaternary ammonium salts can cause a false positive test. This can occur when benzalkonium chloride is used to clean containers for urine collection when they are not properly rinsed. Consumers should be advised to rinse glassware completely and carefully after washing, and to avoid using bactericidal agents that contain quaternary ammonium salts to clean collection glassware.

Urinary pH. Determining the pH of urine is an important diagnostic test for identifying a number of diseases including those stated in Table 3. It is also a normal part of many routine urinalyses during physical examination. The pH reflects the amount of acidic or alkaline salts which are passed with the urine. Normal urine has a pH range of 4.8 to 8.5 (average pH is 5.5). In severe ketosis, however, urine pH may drop to below 4.8, and with urinary tract infections, may rise to 9 or higher.

Substances that are primarily responsible for maintaining proper urinary pH include potassium and sodium mono- and dihydrogen phosphates, ammonium salts, sodium bicarbonate, sodium citrate, and carbonic acid. A number of other substances also contribute, but to lesser degree.

When large quantities of water are ingested, urinary pH tends to remain near neutral because the kidney does not have time to perform its pH-regulatory functions. Patients testing urine pH to monitor a disease should be advised to check it at the same time

Table 2

Diseases that should be considered when protein is found in the urine
Acute glomerulonephritis
Chronic glomerulonephritis
Intercapillary glomerulosclerosis
Malignant nephrosclerosis
Scleroderma of the kidney
Lipoid nephrosis
Systemic lupus erythematosus
Renal arterial occlusion
Renal vein thrombosis
Eclampsia
Preeclampsia
Polycystic kidney
Hereditary nephritis
Angiokeratoma corpus diffusum
Hypercalcemic nephropathy
Gouty kidney
Nephrolithiasis
Chronic renal failure
Acute renal failure
Obstructive uropathy
Acute pyelonephritis
Chronic pyelonephritis
Papillary necrosis
Periarteritis
Wilms' tumor
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Amyloid kidney
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Nephrosis
Multiple myeloma
Sickle cell nephropathy
Radiation nephritis
Fanconi syndrome

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Table 3

Diseases detected by alteration of urinary pH
Renal tubular acidosis
Urinary tract infections
Renal tubular alkalosis
Fanconi syndrome
Respiratory acidosis
Respiratory alkalosis
Metabolic acidosis
Metabolic alkalosis

each day and avoid drinking large quantities of fluid for several hours preceding the test.

Several testing methods are available for determining urinary pH. Litmus paper tells whether urine is acid or alkaline. It is not specific enough for denoting the exact pH value. Nitrazine paper has a limited pH range and must be correlated to a color chart when used with urine. The most convenient measurement for urine pH is the dip-and-read pH indictor strips that measure urinary values ranging from 5 to 9. These employ two indicators: methyl red and bromthymol blue.

Used alone, urinary pH determination has little clinical significance because of normal fluctuation throughout the day. However, when combined with other tests or specific symptoms, it provides a valuable aid to confirm or deny the presence of specific pathology. If an individual has marked clinical symptoms of acidosis, for example, but shows a urinary pH of 6 to 7, a diagnosis of acidosis is not valid. With symptoms of acidosis and a urinary pH of 3.5 to 4, the chance that this is present is much more probable.

Another important reason to determine urinary pH is to assist in management of certain diseases. In the presence of some urinary tract infections, urine should be acidic. This is especially true when invading bacteria are urea-splitting. To assure maximum effect from drugs such as methenamine salts (e.g., Mandelamine, Urex), urine must be acidic. With the oxyquinolines (e.g., Noroxin, Cipro) urinary pH is not a factor.

When treating renal stones, an acidic media should be maintained to ensure maximal solubility of the causative chemicals. These include stones caused by the deposition of calcium phosphate, magnesium ammonium phosphate and calcium carbonate. Treatment of stones consisting of uric acid and ureates, calcium oxalate, and cysteine require that an alkaline urine be maintained.

When treating drug overdoses of ionizable drugs, excretion may be enhanced by maintaining an acidic or alkaline urine. Salicylates and barbiturates are excreted from the body in greater amount when urine is alkaline. Amphetamine is excreted in greater amount when urine is acidic.

To properly perform urinary pH tests, it is important that urine be collected in clean containers and tested immediately upon voiding. When urine stands for several hours, bacteria may convert urea which is neutral to alkaline ammonium salts, and a false alkaline reading results. Othertimes, bacteria may grow in standing urine to produce an acidic pH.

When using a combination strip test for determining pH, consumers should be advised that the drop of urine remaining on the strip should be removed by touching it to the side of the collection container before reading. This prevents the "run-over" phenomenon, that is, of washing reagents from one area of the stick onto the pH area which can significantly alter the pH reading. It is especially significant with alkaline urine, since the area around the pH test portion of the strip is acidic.

Urinary Blood, Hemoglobin, and Myoglobin. The presence of blood, hemoglobin or myoglobin in urine may result from a number of diseases (Table 4). Important terminology that relates to finding these substances in urine follows.

Gross blood is visible to the naked eye. It may cause a smokey appearance in the urine if present in low concentration, or darker red color if present in large amounts. **Occult (hidden) blood** is not visible to the unaided eye. Detection of occult blood depends upon chemical reactions in which the peroxidase-like activity of hemoglobin is seen by a change in color with guaiac.

Hematuria refers to the presence of intact blood cells in urine from renal disease or bleeding into the urinary tract from another area of the body. The presence of hemoglobin in urine implies hematuria.

Hemoglobinuria results from hemolysis of blood cells within the renal tubules, discharging hemoglobin into the urine. Infection and immunologic reactions are the most frequent causes. Ingestion of toxic chemicals is another cause.

Table 4

Diseases detected when blood, hemoglobin, or myoglobin is present in urine
Acute and chronic pyelonephritis
Papillary necrosis
Acute and chronic renal failure
Nephrolithiasis
Eclampsia and preeclampsia
Lipoid nephrosis
Renal vein thrombosis
Polycystic kidney
Nephritis and nephrosis
Amyloid kidney
Wilms' tumor
Intercapillary glomerulosclerosis
Scleroderma of the kidney
Systemic lupus erythematosus
Angioseratoma corpus diffusum
Hypercalcemic nephropathy
Obstructive uropathy
Multiple myeloma
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Acute and chronic glomerulonephritis
Malignant nephrosclerosis
Periarteritis
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Kemmelsteil-Wilson syndrome
Renal arterial occlusion

Myoglobinuria refers to the presence of myoglobin in urine. Myoglobin is the oxygen-carrying component of muscle. It may appear with muscle-wasting disease or severe trauma. Myoglobin is frequently present in the urine of persons involved in contact sports, following myocardial infarction, and during renal failure.

OTC testing products can give a positive reading for all three substances. Since each has its own pathologic significance, careful microscopic examination and tests in a clinical laboratory are essential to completely evaluate the situation.

A stick-test product for blood in urine (Hemastix®) uses cumene hydroperoxide and orthotolidine as the indicator. The stick is immersed in urine, removed, and then compared to a color chart after 30 seconds.

Urinary Bilirubin and Urobilinogen. Normally urine is free of bilirubin. It is excreted with bile from the liver and gallbladder into the small intestine after conjugation as a mono- or diglucuronide. Conjugated bilirubin forms the basis for urobilinogen, which is manufactured within the intestine. In liver damage or inflammation, excess bilirubin may accumulate in the blood and be excreted into the urine. Such damage may occur from infection (e.g., hepatitis), hepatotoxic chemicals, or in biliary obstruction. It also results from hemolytic jaundice wherein excessive hemoglobin is destroyed.

A convenient test for bilirubin involves a diazo dye test called Ictotest®. Urine is added to an asbestos cellulose mat. An Ictotest® tablet containing the stable diazonium salt is placed on the mat. If a purple color appears after a small quantity of water/urine is added to the tablet, bilirubin is present. The limitation to this test is that results are qualitative, not quantitative, for bilirubin.

In contrast, normal urine contains urobilinogen. It is formed in the intestine by action of bacteria on bilirubin. It is soluble and a portion is absorbed from the intestine into the blood where it is excreted into the urine. It is also recycled to the liver and secreted from the body back into the intestine through the gallbladder. From there, it can once again be reabsorbed or excreted with feces.

The quantity of urobilinogen formed in the body is dependent on the amount of bilirubin excreted with bile into the intestine. When large amounts are excreted, increased urobilinogen is formed. When bilirubin excretion is decreased, such as in certain liver disease, urobilinogen production is likewise lowered. Broad-spectrum antibiotics may reduce bilirubin conversion to urobilinogen by reducing the number of intestinal bacteria. Also, when liver capacity for secreting urobilinogen into the intestine is limited, more will be excreted in urine. If obstruction of the biliary system limits the amount of bilirubin that is transported to the intestine, less urobilinogen is formed. Urinary urobilinogen is also increased in hemolytic jaundice and has been reported to occur when urine is alkaline.

The strip test for detecting urinary urobilinogen is Urobilistix®. The test uses p-dimethylaminobenzaldehyde buffered to an acidic pH. Sixty seconds after the strip is dipped into a urine sample, the color is compared to a standard chart.

A controversy exists concerning correct time of day to obtain the specimen for testing urinary urobilinogen. Some recommend that testing be done between 2 p.m. to 4 p.m.; others argue that any diurnal (i.e., biological variation) pattern in urobilinogen excretion is insignificant. Most agree that urine should be tested approximately the same time each day, and that the sample be kept out of bright sunlight because of the instability of urobilinogen.

Phenylketonuria. A home testing product called Phenistix® detects the presence of phenylketones in urine. These by-products of normal metabolism are present in the urine in small amounts. However, in persons with an inborn error of metabolism called phenylketonuria (PKU), excessive amounts are transferred to the urine and excreted. The disease is easy to screen for, and relatively easy to treat.

Persons with phenylketonuria lack sufficient phenylalanine hydroxylase. Thus, phenylalanine is not adequately metabolized and blood levels increase. This in turn can lead to brain damage.

It is important to note that phenylalanine is a by-product of metabolism of aspartame (Equal® — Nutrasweet®). Individuals with PKU should avoid foods and drinks containing aspartame; a warning to this effect appears on the labeling of all food and drug products that use aspartame as a sweetener. There is no evidence that aspartame is dangerous to others.

The dip-and-read strip, Phenistix®, contains ferric ammonium sulfate and cyclohexylsulfamic acid as acidifier. Magnesium ions are present to prevent interference of urinary phosphates with the ferric ions. Phenistix® is also useful for screening of toxic substances listed in Table 5.

Elevated urinary phenylketones cannot be accurately measured until 4 to 6 weeks following birth. High blood levels can be measured within three days after birth. Newborns are routinely tested for this before they leave the hospital. Positive results are referred to the pediatrician for proper therapy. The urine test must be performed on fresh samples of urine which must be acidic to avoid bacterial conversion of ferric ions to ferric hydroxide. This would create an orange color and interfere with PKU test results.

Table 5

Examples of substances detected by Phenistix®
Acetoacetic acid
Aminosalicylic acid
Bilirubin
Cyanates
Homogentisic acid
Maple syrup disease
Melanin
Phenothiazines
Phenylpyruvic acid
Pyruvic acid
Salicylates

Part II

This topic will be concluded in Part II. In that article, additional products will be discussed. Also, specific advice to convey to consumers using these products will be summarized.

Dickinson's Pharmacy

by Jim Dickinson

You can end discriminatory pricing. The power of activated pharmacists can be awesome. As one Congressman told a group of pharmacists from this year's annual NARD Legislative Conference: ''Hey, guys, I know why you're here and I'm already on board!''

He was referring to the one-track mind of every pharmacist visiting Capitol Hill this spring—S.2605, or Senator David Pryor's Pharmaceutical Access and Prudent Purchasing Act (PAPPA).

With the support of pharmacists, this bill can effectively outlaw discriminatory pricing by manufacturers, and in so doing end the drift of managed care programs to mail-order plans.

PAPPA would reverse the current bias in Medicaid that crudely extracts cost containment savings only from retail pharmacies while leaving manufacturers untouched.

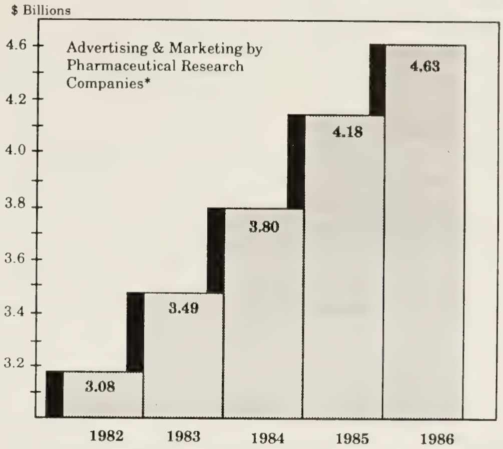
Instead, it would have Medicaid pay pharmacies their actual charges (at the 90th percentile)—without discounts, MACs or EACs. It would shift cost-containment to manufacturers, forcing them into price negotiations with individual state Medicaid programs.

Pryor's staff on the Senate Special Aging Committee told the NARD Legislative Conference that the impetus for these individual negotiations would be their bill's ''or else'' clause—the establishment of a federal pharmacy and therapeutics committee.

Like existing P&T committees in hospitals, this one would identify groups of therapeutically equivalent drug products for the states and private programs to use in their exclusive contracting with individual firms, brand and generic alike.

INNOVATION IN ADVERTISING

#2 in a series



*Extrapolated from data on 24 companies: 67% of U.S. Rx drugs.

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Pharmaceutical Marketers & Advertisers*

* Formerly known as the "Ethical Drug Industry"

Americans for Research in Pharmaceutical Marketing

Additional Copies from Rep. Stark, 1125 LHOB

Another of pharmacy's supporters, Fortney (''Pete'') Stark is spoofing a PMA ad series with this parody that attacks industry advertising expenditures.

''This is what the manufacturers fear most,'' staffer David Schulke told NARD. It is the harbinger of universal one-price policies.

And fear is what the Pharmaceutical Manufacturers Association is exhibiting. Even before the first of the pharmacy delegations began their visits on Capitol Hill, PMA had already been into every office several times, lambasting the Pryor bill and its sponsor personally.

As the pharmacists found, however, PMA's tactics might not have been too smart. The aggressiveness of its premature opposition actually caused many lawmakers to tilt on reflex toward Pryor and pharmacy.

As examples of PMA's propaganda against S.2605, a May 10 package of arguments claimed that the bill could require "tens of millions of telephone calls annually" by pharmacists to physicians, to get permission to make substitutions among "preferred" and non-preferred drugs set by the new national P&T committee.

That's premature nonsense, according to Schulke—unless industry can scare most physicians into writing for non-preferred drugs, those phone calls will likely be uncommon.

Likewise, PMA claimed that the national P&T committee could group eight beta blockers (acebutolol, atenolol, labetalol, metaprolol, nadolol, pindolol, propranolol and timolol) as therapeutic equivalents, when clearly it would have to be incompetent to do so.

The effects of the new reimbursement scheme on manufacturer profits and R&D is similarly being mispresented, Schulke said. Instead of quitting research, companies would be pressed by the new Medicaid purchasing system to shift R&D from me-too drugs in comfortably lucrative market niches (which the bill would make least-profitable) to the truly innovative, major new therapy breakthroughs.

No wonder manufacturers don't like S.2605. It's not comfortable, and it introduces new competitive stresses to their world; the weaker ones may go under, or merge (as many have already done).

But, in the same ethic as that which the manufacturers have been content to watch ravage the retail pharmacy marketplace for two decades, the strong will emerge all the stronger.

It is the industry's turn to bite the bullet (and not, as a PMA paper protested, simply by suffering the attrition of market share that the predictable maturation of patents inevitably causes).

It is pharmacy's turn to grow again, and to prosper in the marketplace.

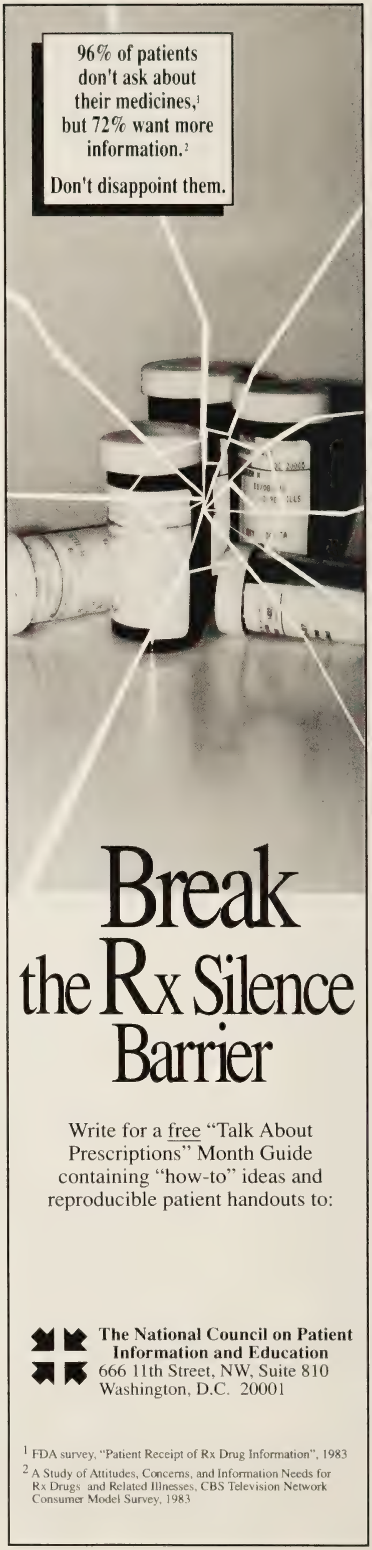
Pharmacy has a lot of friends in this coming battle for its recovery, including even a few of the best PMA firms, like Merck, which has already announced a lowest-price plan for state Medicaid agencies, and others that plan to follow Merck's lead soon.

In addition, the Pryor bill, at our press time, was supported by a rapidly swelling list of powerful allies, including: the American Association of Retired Persons, and a host of other seniors organizations, as well as Senators Brock Adams (D-WA), Dale Bumpers (D-AR), John Breaux (D-LA), Quentin Burdick (D-ND), Kent Conrad (D-ND), James Exon (D-NB), Robert Kerrey (D-NB), Herb Kohl (D-WI) and majority leader George Mitchell (D-ME).

Obviously, there's a long way yet to go. Industry has money to fight with, but there are many more people on pharmacy's side than on industry's. Remember that when company reps bring up this subject!

S.2605 is pharmacy's big shot at a "level playing field." Pharmacy can and will do it—if you do! Write your senators today.

This feature is presented on a grant from "Dickinson's Pharmacy—The Independent Voice," an 8-page practical monthly newsletter available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45.



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[1] FDA survey, "Patient Receipt of Rx Drug Information", 1983

[2] A Study of Attitudes, Concerns, and Information Needs for Rx Drugs and Related Illnesses, CBS Television Network Consumer Model Survey, 1983

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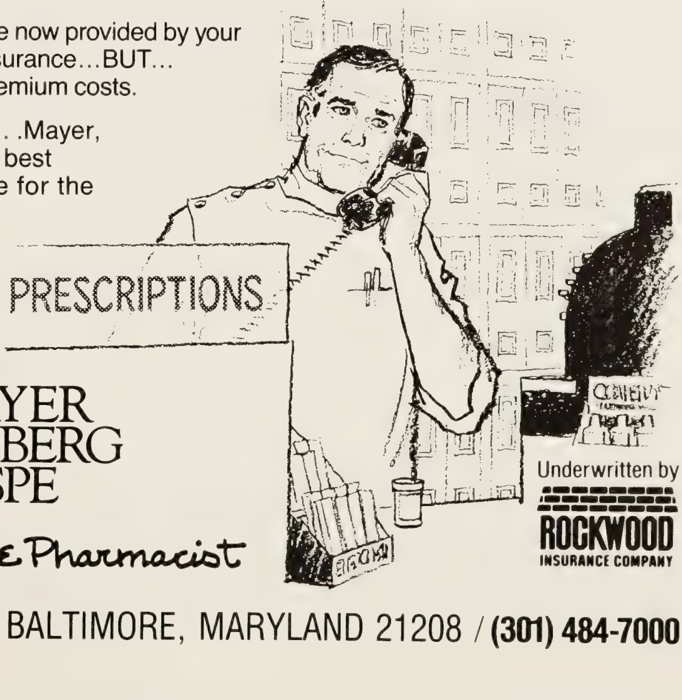

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Medical Emergencies: How Pharmacists Can Save Lives

**Vice Chairman, Medic Alert Pharmacy Task Group
and Executive Vice President,
Iowa Pharmacists Association**

Emma W. could be your patient. She lives alone, and when a neighbor found the 76-year-old lady unconscious, he transported her to the local emergency department. Her vital signs were compromised—a relative bradycardia, respiratory rate of 32, temperature at 99.4 and blood pressure at 170/110.

Given her compromised cerebral function and age, the likely diagnosis was subarachnoid hemorrhage, possibly from a fall or an intracranial aneurysm. But the slight fever also suggested an infection or inflammation, possibly meningitis. Emma was given I.V. fluids and glucose with no effect.

A CAT scan was ordered to determine if Emma was suffering a mass lesion in the brain. But when Emma's reports came back from the lab, she had none of the suspected conditions but rather was suffering from a non-ketotic hyperglycemia. She was an undiagnosed diabetic, and the usual symptoms of this disorder were masked because she was taking a beta blocker for hypertension.

If Emma was conscious and had been able to tell the emergency physician that she was taking a beta blocker, chances are her low heart rate and elevated blood pressure would have been attributed to the medication. There would not have been a need for expensive diagnostic procedures.

In emergency care, we, as pharmacists, have a unique opportunity to make a significant difference. Although pharmacists are not usually involved in emergency care, we are right there on the preventive front lines.

This is because we are in the unique position of being able to recognize serious or "hidden" medical conditions in our patients. If these are not known in a timely manner during an emergency, these conditions can easily jeopardize the patient's life. In some emergencies, only a few minutes can make the difference between life and death.

Patients at particular risk during emergencies, according to emergency physicians, are those with chronic or hidden medical conditions, like Emma W. These patients may have diabetes, heart disease or asthma, allergies, sensitivities to certain medications, or may be taking prescribed or over-the-counter drugs like anticoagulants, antiarrhythmics, anti-convulsants, beta blockers and analgesics that could compromise their safety in an emergency.

We see them every day. At least one in four patients who walk through our doors has such a pre-existing medical condition, allergy or other serious medical concern. Especially vulnerable are the elderly like Emma—who are usually taking multiple medications or have physical conditions that compromise their health. In fact, 51% of drug-related problems involve people over the age of 60.

Studies show that the availability of pertinent medical and therapeutic information can significantly affect the outcome of emergency care. In some cases where pharmacists have been helpful in providing essential information about emergency patients, treatment outcome has been improved.

A recent study by the Robert Wood Johnson Foundation found that there are about 80 million emergency cases each year. Of these, 20 million may have underlying medical conditions that can compromise emergency treatment. Ten million require immediate care—in many cases, to save life or limb.

About five million of immediate care emergencies could benefit significantly from the up-to-date medical information provided by the Medic Alert service. Of these five million, literally hundreds of thousands of lives have been saved.

In emergencies, these patients may be unconscious, incoherent or otherwise unable to speak for themselves. A Medic Alert bracelet or neckchain can speak for them, and may well be their link to life. But only if these patients are made aware of Medic Alert.

That's where we, as pharmacists, can play a significant role.

The Medic Alert Emergency Information System

Over 30 years ago, Dr. Marion Collins saw a need for an identification system that could provide help to a patient needing emergency care—anywhere in the world. He established the non-profit Medic Alert International Foundation with headquarters in Turlock, California. Today, moe than three million persons from nations around the world are enrolled as members. Medic Alert has 34 years of life-saving service, and serves 32 countries through 21 affiliates throughout the world.

In 1987, Medic Alert set up the National Pharmacy Task Group to encourage pharmacists to reach out to their patients with hidden medical conditions and urge them to become members.

The effort is endorsed by the American Pharmaceutical Association (APhA), the National Association of Chain Drug Stores (NACDS), ASHP, NARD, the National Council of State Pharmaceutical Association Executives (NCSPAE), and by some 30 state pharmacy associations. In addition, it is recognized by almost every national medical and health association in the U.S., including the American College of Emergency Physicians and the American Hospital Association.

When I was approached to serve on the Medic Alert National Pharmacy Task Group, I immediately agreed. Here was an opportunity not only to save lives and speed recovery of emergency victims, but also to enhance the image of "the family pharmacist"—a primary community resource for vital health information.

The Task Group which guides our national pharmacy program is comprised of leaders from all the major national pharmacy organizations, as well as practicing community, hospital, and chain pharmacists.

As Vice Chairman of the Medic Alert Pharmacy Task Group, I am pleased with the strides we've made in the past few years. Since the program began in 1987, some 120,000 patients have been enrolled. Medic Alert research indicates that as many as 25,000 people have benefitted and over 4,000 lives have been saved as a result of direct intervention by a pharmacist. It is expected that very soon well over half of all pharmacies in America will be participating.

I am proud to serve in such a dedicated group alongside chairman Joel Tau, Media and Association Relations Manager for ICI Pharmaceuticals Group. Under Joel's leadership, the National Pharmacy Task Group has expanded the number of its programs in pharmacy, an effort that has been greatly enhanced through a generous public service grant from ICI each year. Working closely with Rich Haggard, Medic Alert Foundation's Vice President of Professional Relations, the Task Group has made tremendous progress in reaching the nation's pharmacists with our important messages.

The Challenges Ahead

As impressive as the numbers are relative to the patients we have enrolled and the lives we have saved, we still have much more work to do. The reason: The numbers of new Medic Alert members per pharmacy has not been growing. Consequently, the focal point of our 1990 campaign is to increase the numbers of patients protected per pharmacy. Our goal is for every participating pharmacy to enroll at least five or six new members this year, and every year.

Also, we would like to see more pharmacies participating in this critically important program. Although 20,000 pharmacies are already participating, our target for 1990–1991 is to add another 10,000 pharmacies for a grand total of 30,000 pharmacies actively promoting the Medic Alert service.

Another goal is to help as many pharmacists as possible appreciate how ideally suited they are to identify patients at risk, provide information about the benefits of an emergency medical information service like Medic Alert, and how easy it is to incorporate this message into their daily routine.

Many of today's pharmacies are equipped with computerized patient record systems that are often far more complete than a physician's—particularly where therapeutic history is concerned. We are also more readily available to patients for general information and guidance about their medications.

And here are some more good reasons:

Patients often have three or four physicians but only one pharmacist. We see more patients than the average physician. When we fill prescriptions, we can identify the condition for which it is prescribed and we know about potential interactions with other medications.

There are many opportunities for us to suggest the Medic Alert protection to patients we know are at special risk—when filling or refilling prescriptions, taking a patient profile, counseling patients or instructing them on how to take their medications.

To insure that as many pharmacies as possible can offer the service to their patients, patient applications and informational materials are being mailed directly from Medic Alert during the spring and summer months to pharmacists throughout the country to display on counter tops, register locations and in the pharmacy counseling area.

When you receive this material, help the patient fill out the application so that the most up-to-date information about the patient's prescription and over-the-counter medications is recorded.

Pharmacy Continuing Education Program

In order to help pharmacists understand more about particular risks patients run in emergencies, the Task Group is introducing two new features this year—first, a series of Pharmacy Continuing Education programs to be conducted by teams of emergency physicians and clinical pharmacists at most state pharmacy association annual conventions.

The program, "Saving Lives in an Emergency: Three Roles for Pharmacists," has been designed to help pharmacists understand the dynamics of an emergency and learn ways they can help protect the lives of their patients in such circumstances. These programs introduce a series of steps the pharmacist can take to become one of the most vital resources in the community for managing medical emergencies.

The three roles for pharmacists are:

—Identifying patients at risk.
—Reaching out to patients who can benefit.
—Assisting emergency physicians and other emergency caregivers in setting diagnostic and treatment priorities.

The program has been underwritten by a substantial educational grant from ICI Pharmaceuticals Group.

Public Relations Effort

The second component of this educational effort, also underwritten by ICI, is a major public relations program through national and state consumer media which describes this national public health effort by pharmacists and which underscores the pharmacist's life-saving role.

Publicity materials will be distributed to magazines, newspapers and television and radio stations across the country. This high visibility program, coordinated through state pharmacy associations, is aimed at raising public awareness about the hidden dangers of medical emergencies, and will urge patients to ask their pharmacists for information and applications for the Medic Alert Emergency Information System.

On Becoming Involved

The pressure to make important decisions—often life and death decisions—despite the availability of adequate information and the luxury of time—is one of the inherent problems of emergency medicine.

Please note that Medic Alert should not be confused with its imitators—profit-making companies with similar sounding names that have tried to impersonate Medic Alert and charge high prices for inferior service.

Medic Alert is the only non-profit emergency service available. Only Medic Alert provides vital medical information by telephone any time anywhere seven days a week, 24 hours a day through a highly sophisticated, computerized communications system. It meets the highest standards of service and accountability and complements the pharmacist's role as a knowledgeable, accessible provider of health services and information in the community.

So the next time Emma W, or any patient with a hidden medical condition, walks into your pharmacy, take a few minutes to evaluate their medical and therapeutic history, to help them fill out the Medic Alert application form. Just these few minutes may save their life in an emergency.

For information on how to obtain membership enrollment forms and other materials, call 1-800-736-3342, or write Medic Alert Foundation International, Turlock, CA 95381.

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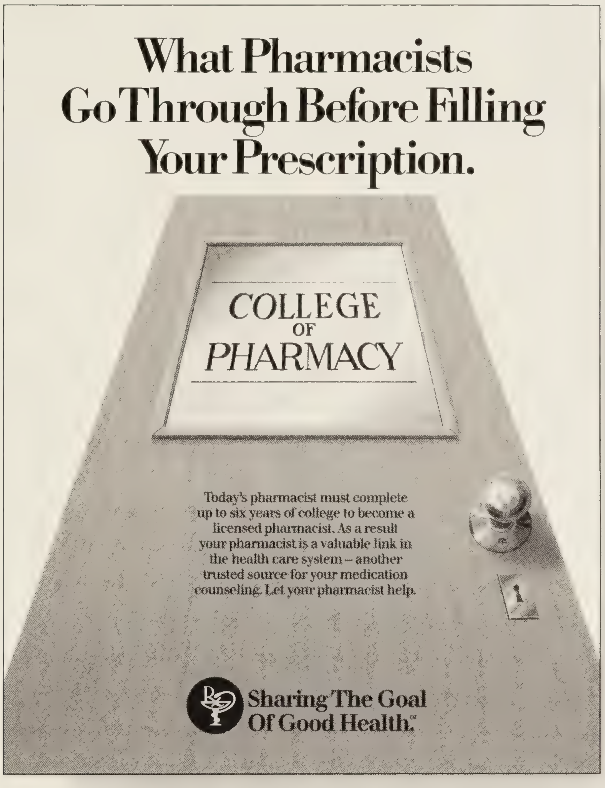
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Guidelines for Product Selection

Dispensing Decisions

The American Pharmaceutical Association's (APhA) Bioequivalency Working Group recommends that pharmacists consider the following factors when selecting drug products to be dispensed to their patients. Not all of these factors will apply to each situation nor are they of equal weight. We believe that by considering these points as part of the professional judgment process when making drug product selections, it is likely that the best interests of the patients will be served. It is the responsibility of the pharmacist to use professional judgment in selecting the product.

1) *State Rules and Regulations:* All states have legal requirements which address the issue of drug product selection. Pharmacists should be cognizant of these requirements and how they may impact their role in drug product selection. State regulations also might provide information and guidance in drug product selection through positive or negative formularies.
2) *Bioequivalency Information / Orange Book Ratings*—Only products with proven bioequivalency should be selected to be dispensed in lieu of the innovator product. Products being dispensed in response to a prescription drug order that is written generically should be expected to produce a therapeutic benefit for the patient at a reasonable cost. Products which are listed in the FDA's Approved Drug Products and Therapeutic Evaluation[1] (The Orange Book) as "A" rated should be selected when such products are available. For pre-1938 drugs, the selection should be based on data obtained from the literature because bioequivalency testing is not required by the FDA for these drug products. FDA's review of the applicants bioequivalency study is available under Freedom of Information (FOI).[2]
3) *Dosage Form*—The type of dosage form should be considered whenever one drug product is selected from among multisource drug products. This is especially true with extended or delayed release medications. The Orange Book does not rate any different dosage forms as therapeutically equivalent.
4) *Previous Drug Use*—Two questions should be considered regarding previous drug product usage. First, is the drug prescribed a continuation of already successful therapy? If it is, only a bioequivalent product should be selected and the impact of any change in source of the medication should be considered. The pharmacist should also know which product the patient was using previously, including any medications in the hospital if the patient was recently discharged. Second, was the original product dispensed a generic product? If so, preference should be given to continuing to dispense the same generic product from the same source.
5) *Patient Status*—The pharmacist should consider how well controlled the patient is and how susceptible that patient might be to small changes in drug absorption. If a patient has labile control or has experienced great difficulty in achieving control, the pharmacist should continue therapy with a product from a single source throughout therapy.
6) *Diseases*—The seriousness of the disease and the potential impact of the disease on the patient may influence the pharmacist's willingness to change products.
7) *Drug Class or Category*—Drugs with narrow therapeutic ranges and with known clinically significant bioavailability problems should be substituted with care and/or after discussion with the prescriber.
8) *Cost*—The cost of the product while an important consideration should be a secondary consideration in selecting among products judged by the pharmacist to be bioequivalent.
9) *Patient Opinion*—An informed patient, cooperating with a physician and pharmacist in his/her drug therapy, is an important element in ensuring the best possible therapeutic outcomes. The pharmacist should take into account the patients needs when selecting from multi-source drug products and inform the patient of any potential consequences associated with alternate product selections.

Purchase Decisions

The American Pharmaceutical Association's (APhA) Bioequivalency Working Group recommends that pharmacists consider the following factors when purchasing products from multi-source vendors. Not all of these factors are of equal importance in each purchasing decision, but are worthy of consideration.

1) *Current State Laws and Regulations*—States have legal requirements which address the issue of drug product se-

lection. Some states have positive or negative formulary systems which place regulatory restrictions on the products considered therapeutically equivalent. The state formulary may not always be in agreement with classifications listed in the FDA's Orange Book. Therefore, pharmacists should be familiar with both. Some states also have regulations which define the role of pharmacist, physician, and patient in the drug product selection process.

2) *Bioequivalency Information / Orange Book*—Products which have shown to be bioequivalent through reference to the Orange Book or other reliable source of bioequivalency information are preferred. Purchase decisions for drugs marketed prior to 1938 should be based on data obtained from the literature or the manufacturer because bioequivalency testing may not be required by the FDA for these drug products.
3) *Drug Category*—Greater attention should be given to purchasing strategies for drug products used for serious or life-threatening diseases and in situations where therapeutic activity of the product is confined to a narrow range of biologic fluid concentration.
4) *Availability*—A continuous supply from the same manufacturer is essential even in the event that the distributor has changed in assuring that refills of prescriptions will contain the same product as originally dispensed. However, in those instances when the manufacturer of a generic drug product has to be changed, care should be exercised to ensure the new drug product is equivalent to the formerly stocked drug product.
5) *Supplier's Reputation*—The reputation of the manufacturer in terms of its ability to adhere to good manufacturing practices (GMP) that ensure each dosage form is manufactured correctly and in a consistent manner is an important consideration. When purchasing a product from a distributor rather than directly from the manufacturer, the procedure used by that supplier in selecting manufacturers for multi-source products is also an important consideration. Establishment Inspection Reports and recall reports[3] are available from FDA through a Freedom of Information (FOI) request. These are valuable tools in this decision.
6) *Cost*—Cost of the product is an important consideration both for the patient and the pharmacy.

REFERENCES

1. A subscription to the "Orange Book," which includes the 1990 Basic Manual and monthly supplements, is available for $91 from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9372. A subscription to the USP-DI, Approvded Drug Products and Legal Requirements, Volume III includes one book and monthly updates is available for $59 from the U.S. Pharmacopeial Convention, Inc., Order Processing Department, 12601 Twin Brook Parkway, Rockville, MD 20852.
2. Freedom of Information Staff, HFW-35, Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857; Telephone: (301) 433-6310.
3. Recall/Regulatory Analysis, P.O. Box 6353, Silver Spring, MD 20906; Telephone (301) 460-8821.

Scheer Elected to NABP Executive Committee

Roslyn Scheer, executive director of the Maryland State Board of Pharmacy, was elected to a second term on the National Association of Boards of Pharmacy Executive Committee at the Association's 86th Annual Meeting, May 19–23, 1990, at the Arizona Biltmore Hotel in Phoenix.

As a member of the Executive Committee, Scheer has continued to work for the betterment of the profession of pharmacy. She is the liaison to the NABP Committee on Pharmacy Education/Internship and has served as a member of the Legislative/Law Enforcement Committee and the Constitution and Bylaws Committee.

Ms. Scheer received her degree in business administration in 1971 from Boston University and an MAS in Management Science from Johns Hopkins University in 1980.

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References
1. *USP DI Update, September/October 1988, p 120.*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774.*

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nizatidine capsules

Brief Summary. Consult the package literature for complete information.

Indications and Usage: 1. *Active duodenal ulcer*—for up to eight weeks of treatment. Most patients heal within four weeks.

2. *Maintenance therapy*—for healed duodenal ulcer patients at a reduced dosage of 150 mg h.s. The consequences of therapy with Axid for longer than one year are not known.

Contraindication: Known hypersensitivity to the drug. Use with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General*—1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Dosage should be reduced in patients with moderate to severe renal insufficiency.

3. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests—False-positive tests for urobilinogen with Multistix® may occur during therapy

Drug Interactions—No interactions have been observed with theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450 enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increased serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

PV 2098 AMP [091289]

Additional information available to the profession on request.

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An Elderly Perspective— The New RDAs

Joan S. Cambias

INTRODUCTION

The Recommended Dietary Allowances (RDAs) are levels of dietary intake that have been agreed upon by the Food and Nutrition Board of the National Research Council to meet nutritional requirements of most healthy people. The numbers are based on scientific data and are thus being constantly revised as new information is collected. They are not to be confused with the USRDAs that are put out by the Food and Drug Administration for labeling purposes. The most recent edition of the RDAs was released October 23, 1989.[1] While a few things were changed since the 1980 edition,[2] RDAs for the elderly remained scarcely addressed at all. The elderly have more chronic diseases, are on more medications, and may not be as educated as the younger generations as to the effect of nutrition on their health. Lifestyles for the elderly differ for 65 to 74, 75 to 85, and over 85 years of age. And these differ greatly from those 51 to 64 years old. Yet the RDAs continue to group all these age groups together for all nutritional requirements.

Is there a failure to address this large group because they are difficult to research, because the results are vague or controversial, or is it that no one thinks the group needs redefining? In any case, there do exist studies about nutritional requirements in the healthy elderly and in elderly with chronic diseases, and it seems only proper to have standards for these groups as well as for the younger population.

CHANGES IN THE TENTH EDITION OF THE RDAs

Things that are changed in the tenth and latest edition of the RDAs include age/sex groupings. The 19 to 22 year old group was changed to 19 to 24 years because it is thought that 23 and 24 year old men and women still need higher amounts of calcium for bone remineralization, since peak bone mass is not reached until age 25. Also, the group of lactating women was broken down into the first six months and the second six months because less milk is produced during the latter period and requirements lessened. While it was deemed necessary to more accurately define these two age/sex groups, it is interesting to note that all elderly are grouped in the same fifty-one plus group. Surely this category should be broken down further as previously suggested and as recommended by Monsen, editor of the Journal of the American Dietetic Association.[3]

Another change is the use of actual median weights and heights rather than ideal ones for defining the age/sex groupings. Once again, these parameters are not addressed at all in the various age groups over fifty-one. If indeed the median height and weight decreases in men from the age of 25 to 51, as the new RDAs show, then might they not also continue the trend between 51 and 90+?

A new method of calculating energy requirements was used in this edition of the RDAs. Resting energy expenditure (REE) was multiplied by activity factors. This gave calories per day for men and women, which varied little from the 1980 recommended energy intakes. The activity factors vary with age. McGandy, et al.,[4] found that aging affects activity factors more than REE. They also found a sharp drop in activity after age seventy-five. The book put out describing the new RDAs even states that energy requirements of those over seventy-five are likely to be less due to the change in REE and activity. Thus it appears that energy requirements do change in that range of ages over fifty-one. Why then don't they include this information in the tables?

In the elderly there is a decreased need for energy intake for two reasons. Firstly, and most importantly, there is a decrease in physical activity. Secondly, there is a change in body composition. There is a decrease in muscle mass and a decrease in basal metabolic rate.[5] The problem becomes one of decreasing an older person's caloric intake while still maintaining the necessary nutrients. Some nutrient requirements are lower for the elderly, but some stay the same. How do we get the same level of nutrients but take in less food? There can either be a revision in types of food eaten, an appropriate exercise program, or a supplementation that will provide those level of nutrients for this age group.

Vitamin K and selenium's status has changed since the 1980 RDAs. At that time they were included in the category of Estimated Safe and Adequate Daily Dietary Intake (ESADDI) and a range of values was recommended rather than a specific amount. For instance, vitamin K's ESADDI ranged from 70 to 140 micrograms. The 1989 recommendation is 80 micrograms for males and 65 micrograms for females which is at the low end of the 1980 range. Selenium's range was 50 to 200 mi-

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Editors Note: This article is the beginning of a new column featuring student research projects for the UMAB School of Pharmacy's Geriatric Initiative Course. These articles have been selected by an expert panel of reviewers including Peter P. Lamy, Ph.D., and Ilene Zuckerman, Pharm.D. of the School.

crograms in 1980. It changed to 70 micrograms for males and 55 micrograms for females (again the low end of the range).

Vitamin K is important because it activates prothrombin and supports the normal clotting mechanism. There is no evidence that healthy elderly have a different requirement than other age groups, but there are many elderly with disease states that do alter their vitamin K requirements. Conditions such as bleeding disorders, ulcerative colitis, intestinal resection and others do require vitamin K supplementation. Also, many elderly are on oral anticoagulants which inhibit the formation of prothrombin. If there becomes a significant prothrombin deficiency then vitamin K needs to be given. Thus attention must be paid to the status of the elderly, many of whom are not healthy, and RDAs must be reconsidered for them.

Selenium is a water soluble antioxidant found in seafood, meat, and some whole grains. Research has been done regarding selenium's protection against cardiovascular disease and cancer. However, studies are inconclusive. Researchers in New Zealand[6] showed diets containing 20 to 40 micrograms were sufficient. Most Americans are taken greater than 100 micrograms daily.[7] The RDAs for the elderly don't change from other age groups because there is no data on their requirements. However, it has been shown that people requiring total parenteral nutrition (of which the majority are elderly) may get selenium deficiencies which can be reversed when given supplemental selenium. Another study[8] showed that housebound elderly had a suboptimal selenium level when compared to the elderly that get out. Once again, there is a need to individualize RDAs in much of the elderly population.

Several RDAs were lowered for all age groups. These were folate, B_6, B_{12}, magnesium, women's iron, and zinc. Folate RDAs were lowered 50% to 55% because the lower intakes were shown to produce adequate folate levels.[9] There is no evidence that folate requirements change in the elderly.[10] B_6 requirements for intake were also changed. The 1980 values were 2.2 milligrams for men and 2.0 milligrams for women. Because of evidence of adequate B_6 status with lower intake[11], the RDAs are currently 2.0 milligrams for men over 14 years of age and 1.6 milligrams for women over 18 years of age. Some studies suggest an increased need for B_6 in the elderly,[12] but findings are inconclusive. With increasing age, there appears to be a decrease level of serum and plasma pyridoxal phosphate (the most physiologically active form of vitamin B_6). This may be due to changes in B_6 absorption or metabolism. It remains to be seen that pyridoxal phosphate levels can be enhanced by a change in the RDA or even if that change would be beneficial.

RDAs for B_{12} dropped one-third to one-half for all age groups. The requirement decreased from 3.0 micrograms in 1980 to 2.0 micrograms for adults. These new allowances are adequate to sustain metabolic maintenance according to the FAO.[13] There is evidence that serum B_{12} levels decrease in the elderly,[14] but this may be due to an increased number of the elderly having a malabsorption problem, especially atrophic gastritis and bacterial overgrowth. In those people B_{12} should be given as an injection; there should not be an increase in their RDA. Magnesium RDAs were lowered for most women, infants, and children. This reflects the recently accepted RDA of 4.5 milligrams per kilogram. The RDA for iron was lowered for adult women to 15 milligrams per kilogram. Magnesium RDAs are not known to be different for the elderly. There was no change in the recommendation for women over fifty-one or men because there is no evidence of a high rate of iron deficiency in the elderly. Because menstruation stops, women and men have the same requirements. It has also been shown that heme iron absorption of ferrous sulfate is unaltered with aging.

Zinc requirements changed for women of all ages because of the difference in weight for the RDAs compared to the previous edition. Currently there is no evidence that zinc intake needs to be different for the el-

Estimated safe and adequate daily dietary intakes (ESADDIs) of selected vitamins and minerals[a]

Age group (years)	Vitamins		Trace elements[b]				
	Biotin	Pantothenic acid	Copper	Manganese	Fluoride	Chromium	Molybdenum
	µg	mg		← mg →		← µg →	
Infants							
0–0.5	10	2	0.4–0.6	0.3–0.6	0.1–0.5	10–40	15–30
0.5–1	15	3	0.6–0.7	0.6–1.0	0.2–1.0	20–60	20–40
Chilren and adolescents							
1–3	20	3	0.7–1.0	1.0–1.5	0.5–1.5	20–80	25–50
4–6	25	3–4	1.0–1.5	1.5–2.0	1.0–2.5	30–120	30–75
7–10	30	4–5	1.0–2.0	2.0–3.0	1.5–2.5	50–200	50–150
11+	30–100	4–7	1.5–2.5	2.0–5.0	1.5–2.5	50–200	75–250
Adults	30–100	4–7	1.5–3.0	2.0–5.0	1.5–4.0	50–200	75–250

[a] Because there is less information on which to base allowances, these figures are not given in the main table of RDA and are provided here in the form of ranges of recommended intakes.

[b] Since the toxic levels for many trace elements may be only several times usual intakes, the upper levels for the trace elements given in this table should not be habitually exceeded.

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Estimated minimum requirements (EMRs) for sodium, chloride, and potassium for healthy persons[a]

Age	Weight[a]	Sodium[a,b]	Chloride[a,b]	Potassium[c]
	kg	←	mg	→
Months				
0–5	4.5	120	180	500
6–11	8.9	200	300	700
Years				
1	11.0	225	350	1,000
2–5	16.0	300	500	1,400
6–9	25.0	400	600	1,600
10–18	50.0	500	750	2,000
>18[d]	70.0	500	750	2,000

[a] No allowance has been included for large, prolonged losses from the skin through sweat.

[b] There is no evidence that higher intakes confer any health benefit.

[c] Desirable intakes of potassium may considerably exceed these values (~3,500 mg for adults).

[d] No allowance included for growth. Values for those below 18 years assume a growth rate at the 50th percentile reported by the National Center for Health Statistics (Hamill, P. V. V., Drizd, T. A., Johnson, C. L., Reed, R. B., Roche, A. F., and Moore, W. M.: Physical growth. National Center for Health Statistics Percentiles. Am J Clin Nutr 32:607, 1979) and averaged for males and females.

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derly. Zinc is necessary for T cell lymphocyte functioning, and thus important to the elderly who may be as risk for immune cell deficiencies and diseases. Although zinc plasma level have been shown to be lower in the elderly in one study,[15] zinc concentration in leukocytes were not altered in that same study. Bunker[16] shows there to be suboptimal zinc status in housebound elderly, so deficiencies in this population should be screened for.

Also published by the National Academy of Sciences are the Estimated Safe and Adequate Daily Dietary Intakes (ESADDIs). They are ranges of certain vitamins and element for which there is not enough data to recommend a particular level of intake as with the RDAs. The tenth edition saw lowering of the ranges for biotin, copper, and molybdenum. These were changed because of more accurate methods of analyzing intake. Lower levels of intake were found to be adequate for maintenance in most healthy people; hence, the ESADDI was lowered. There is no delineation between ages above eleven years.

Electrolytes Na+, Cl−, and K+ have been recategorized from ESADDI to a new classification EMR (Estimated Minimum Requirements). The requirements have been greatly reduced for Na+ and Cl− compared to the 1980 ESADDIs and slightly reduced for K+. Again there is no distinction over eighteen years of age, probably due to the lack of research in the elderly.

SHOULD OTHER RDAs BE CHANGED FOR THE ELDERLY?

Vitamin A RDAs remain at 1000 micrograms of retinol for men, 800 micrograms for women with no different levels for the elderly. Studies have revealed that like several of the vitamins that were reduced, he elderly are able to maintain stores of vitamin A despite intakes that are beneath the RDA.[17] However, the RDAs were not changed. A possible reason for this is that pro vitamin A carotenoids may prevent some types of cancer and therefore it may be beneficial to take larger amounts. This is not definitive though, but until further studies are done, the RDAs will not be changed.

Vitamin D stores are lower in the elderly compared to the younger people.[18] The reason is probably threefold. Firstly and foremost is lack of sun exposure. Many elderly are housebound, have respiratory diseases that require controlled atmospheres, or have decreased tolerance to heat and cold so they often don't desire to go outside. Sun exposure is the most important way of obtaining vitamin D requirements. Secondly, there is evidence that the skin's ability to synthesize vitamin D_3 is reduced by half in the elderly.[19] Lastly, there appears to be impaired hydroxylation of vitamin D in the kidney of the elderly, which produces vitamin D's most active form. Though there appears to be lower levels, it is unknown whether it is due to a decreased need or an insufficient intake of vitamin D. There is also controversy as to whether oral supplementation is effective because of changes in absorption. It is recommended that housebound elderly try to increase their sun exposure and/or take low dose supplements of 10 micrograms per day of vitamin D.[20]

Higher intakes may be dangerous especially for the elderly. Megadoses of vitamins and minerals can cause toxicities since the liver or kidney function may be compromised. Toxic metabolites can build up quickly in those situations. Vitamin D toxicity can lead to renal function impairment, hypercalcemia due to bone resorption, increased cholesterol in plasma, mental retardation, etc.[21] Other supplements can cause problems too, especially vitamin A, vitamin C, and most minerals. Therefore pharmacists should avoid recommending megadoses of any supplement.

The reason the RDAs for calcium were not raised for women over twenty-five years is because there was not enough evidence that it could decrease the risk of osteoporosis. It seems that estrogen deficiency and not aging is the main cause of bone loss which leads to osteoporosis in women.[22] Calcium deficiencies are frequent in the elderly and many deficiencies may be due to less efficient absorption. Walden[23] says the RDA of calcium may be insufficient to meet the needs of "poor absorbers," but adequate for others. The problem with research studies of calcium is that people absorb calcium differently. Another reason for calcium deficiencies may be that many elderly don't take in much milk or dairy products. In some cases this is due to intestinal lactose deficiency which can cause cramps when dairy foods are being digested.

Some suggest the calcium RDA be increased from 800 to 1400 milligrams per day for the elderly[24] and some claim that the increased calcium intake decreases the fracture rate of those with osteoporosis.[25] It seems that there is definitely a need to identify those with de-

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ficiencies and be sure they get adequate intake in their diet or use a supplement. Whether the RDA is appropriate or not, there needs to be an effort to get the elderly to take in the present RDA—that's where the real problem lies.

The present recommendation for vitamin C in the diet is 60 milligrams per day for all adult men and women. Many reports on vitamin C status in the elderly show low plasma levels. This has generally been attributed to less than adequate intake.[26] However, Garry[27] suggests a need to increase the RDA for the elderly to 150 milligrams per day for men and 75 milligrams per day for women. His study shows that these intakes are necessary to maintain a steady state plasma level of 1.0 milligrams per deciliter. This level reflects the optimum obtainable body pool of ascorbic acid which is recommended to establish peak physical and mental health.

Since the elderly are frequently deficient in vitamin C stores, they should be observed for diseases and conditions that could be due to such a deficiency and if needed, a supplementation should be used.

Thiamine RDAs are less for those over fifty-one years of age than for younger adults. Since thiamine requirements are limited to total caloric intake, it makes sense that the lower caloric requirement for the elderly reflects a lowered thiamine requirement. Currently the RDA is considered adequate. There is no evidence for different requirements for vitamin E, riboflavin, niacin, phosphorus, or iodine in the elderly. As for protein, there is evidence that its metabolism does change as we age. Muscle mass diminishes and there is an increase in body fat. However, the effect on protein requirements is not clear. There is not enough data to conclude that protein requirements are different for the elderly.

Although the National Research Council does recommend that more than half of the caloric intake be carbohydrates, there is no RDA for them. Protein, carbohydrate, and fat can be converted to glucose for energy. Since there is an RDA for protein some feel that there is a need to have RDAs for carbohydrates, fats, and fiber also. These requirements would probably change for the elderly population and that would be important to know.

CONCLUSION

The National Research Council has yet to differentiate those age groups beyond fifty-one years. However, there is a need to address differences in the elderly population because more and more of the United States will be part of this group in the near future. If there are differences in activity levels and energy requirements then there surely will be differences in the nutrient requirements. With all the drugs the elderly

Median heights and weights and recommended energy intake

Sex group and age (years) or condition	Weight		Height			Average energy allowances[b]		
	kg	lb	cm	in	REE[a]	Multiples of REE	per kg	per day[c]
					(kcal/day)		← kcal	→
Infants								
0.0–0.5	6	13	60	24	320		108	650
0.5–1.0	9	20	71	28	500		98	850
Children								
1–3	13	29	90	35	740		102	1,300
4–6	20	44	112	44	950		90	1,800
7–10	28	62	132	52	1,130		70	2,000
Males								
11–14	45	99	157	62	1,440	1.70	55	2,500
15–18	66	145	176	69	1,760	1.67	45	3,000
19–24	72	160	177	70	1,780	1.67	40	2,900
25–50	79	174	176	70	1,800	1.60	37	2,900
51+	77	170	173	68	1,530	1.50	30	2,300
Females								
11–14	46	101	157	62	1,310	1.67	47	2,200
15–18	55	120	163	64	1,370	1.60	40	2,200
19–24	58	128	164	65	1,350	1.60	38	2,200
25–50	63	138	163	64	1,380	1.55	36	2,200
51+	65	143	160	63	1,280	1.50	30	1,900
Pregnant								
1st trimester								+0
2nd trimester								+300
3rd trimester								+300
Lactating								
1st 6 months								+500
2nd 6 months								+500

[a] REE = resting energy expenditure. Calculation based on FAO equations, then rounded.
[b] In the range of light to moderate activity, the coefficient of variation is ±20%.
[c] Figure is rounded.

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Food and Nutrition Board, National Academy of Sciences—National Research Council
Recommended Dietary Allowances (RDAs),[a] Revised 1989
Designed for the maintenance of good nutrition of practically all healthy people in the United States

Age (years) and sex group	Weight[b]		Height[b]			Fat-soluble vitamins				Water-soluble vitamins	
	kg	lb	cm	in.	Protein	Vitamin A	Vitamin D	Vitamin E	Vitamin K	Vitamin C	Thiamin
					gm	*μg RE*[c]	*μg*[d]	*mg α-TE*[e]	*μg*	← *mg*	→
Infants											
0.0–0.5	6	13	60	24	13	375	7.5	3	5	30	0.3
0.5–1.0	9	20	71	28	14	375	10	4	10	35	0.4
Children											
1–3	13	29	90	35	16	400	10	6	15	40	0.7
4–6	20	44	112	44	24	500	10	7	20	45	0.9
7–10	28	62	132	52	28	700	10	7	30	45	1.0
Males											
11–14	45	99	157	62	45	1,000	10	10	45	50	1.3
15–18	66	145	176	69	59	1,000	10	10	65	60	1.5
19–24	72	160	177	70	58	1,000	10	10	70	60	1.5
25–50	79	174	176	70	63	1,000	5	10	80	60	1.5
51+	77	170	173	68	63	1,000	5	10	80	60	1.2
Females											
11–14	46	101	157	62	46	800	10	8	45	50	1.1
15–18	55	120	163	64	44	800	10	8	55	60	1.1
19–24	58	128	164	65	46	800	10	8	60	60	1.1
25–50	63	138	163	64	50	800	5	8	65	60	1.1
51+	65	143	160	63	50	800	5	8	65	60	1.0
Pregnant					60	800	10	10	65	70	1.5
Lactating											
1st 6 months					65	1,300	10	12	65	95	1.6
2nd 6 months					62	1,200	10	11	65	90	1.6

[a] The allowances, expressed as average daily intakes over time, are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined. See text for detailed discussion of allowances and of nutrients not tabulated.

[b] Weights and heights of Reference Adults are actual medians for the U.S. population of the designated age, as reported by NHANES II. The median weights and heights of those under 19 years of age were taken from Hamill, P. V. V., Drizd, T. A., Johnson, C. L., Reed, R. B., Roche, A. F., and Moore, W. M.: Physical growth. National Center for Health Statistics Percentiles. Am J Clin Nutr 32:607, 1979. The use of these figures does not imply that the height-to-weight ratios are ideal.

[c] Retinol equivalents. 1 retinol equivalent = 1 μg retinol or 6 μg β-carotene. See text for calculation of vitamin A activity of diets as retinol equivalents.

[d] As cholecalciferol. 10 μg cholecalciferol = 400 IU of vitamin D.

[e] α-Tocopherol equivalents. 1 mg d-α tocopherol = 1 α-TE. See text for variation in allowances and calculation of vitamin E activity of the diet as α-tocopherol equivalents.

[f] 1 NE (niacin equivalent) is equal to 1 mg of niacin or 60 mg of dietary tryptophan.

take and all the disease states that are present, there must be more standards of nutritional intake to be considered. With further studies, we may see a need to change RDAs for vitamin A, vitamin D, calcium, vitamin C, and maybe others. Monsen[28] suggests a need for including RDAs for fat, carbohydrate, and fiber, and she suggests RDAs for those with special health problems. She also advocates addressing the prevention of certain diseases by adequate intake of particular nutrients. However, little can be done before appropriate research is done. If nothing else, we need to make people aware that elderly, especially those with illnesses, need to be individually assessed for dietary requirements. Because nutrition is so important for health, we must become more aware of the necessity for adequate nutrition—especially for the elderly, because they are at a high risk for poor health.

REFERENCES

1. Food and Nutrition Board of National Research Council, National Academy of Sciences. Recommended Dietary Allowances, Tenth Edition. National Academy Press, Washington, D.C. 1989; publication 89-13176.
2. American Pharmaceutical Association. Handbook of Nonprescription Drugs, Eighth Edition. Washington, D.C. 1986;216–219.
3. Monsen ER. The tenth edition of the Recommended Dietary Allowances: What's new in the 1989 RDAs? J Am Dietetic Assoc. Dec,1989;89(12):1748–52.
4. McGandy RB, Barrows, Jr. CH, Spanias A, Meredith A, Stone JL, and Norris AH. Nutrient intakes and energy expenditure in men of different ages. J Gerontol. 1966;21:581–87.
5. Mohs ME and Watson RR. Nutritional assessment for the elderly. In: Watson RR, ed. Handbook of Nutrition in the Aged. Boca Raton: CRC Press, Inc. 1985:9.
6. Thomason CD and Robinson MF. Selenium in human health and disease with emphasis on those aspects particular to New Zealand. Am J Clin Nutr. 1980;33:303.
7. Levander OA, Sutherland B, Morris VC, and King JC. Selenium balance in young men during selenium depletion and repletion. Am J Clin Nutr. 1981;34:2262.
8. Bunker VW and Clayton BE. Research review: Studies of the nutrition of elderly people with particular reference to essential trace elements. Age Aging. 1989;18:422–29.
9. Monsen, op. cit.
10. Suter PM and Russell RM. Vitamin requirements of the elderly. Am J Clin Nutr. 1987;45:501–12.
11. Monsen, op. cit.
12. Suter, op cit.

Food and Nutrition Board, National Academy of Sciences—National Research Council (Continued)
Recommended Dietary Allowances (RDAs),ª Revised 1989
Designed for the maintenance of good nutrition of practically all healthy people in the United States

Water-soluble vitamins					Minerals						
Riboflavin	Niacin	Vitamin B_6	Folate	Vitamin B_{12}	Calcium	Phosphorus	Magnesium	Iron	Zinc	Iodine	Selenium
mg →	mg NE†	mg	← μg	→	←		mg		→	← μg	→
0.4	5	0.3	25	0.3	400	300	40	6	5	40	10
0.5	6	0.6	35	0.5	600	500	60	10	5	50	15
0.8	9	1.0	50	0.7	800	800	80	10	10	70	20
1.1	12	1.1	75	1.0	800	800	120	10	10	90	20
1.2	13	1.4	100	1.4	800	800	170	10	10	120	30
1.5	17	1.7	150	2.0	1,200	1,200	270	12	15	150	40
1.8	20	2.0	200	2.0	1,200	1,200	400	12	15	150	50
1.7	19	2.0	200	2.0	1,200	1,200	350	10	15	150	70
1.7	19	2.0	200	2.0	800	800	350	10	15	150	70
1.4	15	2.0	200	2.0	800	800	350	10	15	150	70
1.3	15	1.4	150	2.0	1,200	1,200	280	15	12	150	45
1.3	15	1.5	180	2.0	1,200	1,200	300	15	12	150	50
1.3	15	1.6	180	2.0	1,200	1,200	280	15	12	150	55
1.3	15	1.6	180	2.0	800	800	280	15	12	150	55
1.2	13	1.6	180	2.0	800	800	280	10	12	150	55
1.6	17	2.2	400	2.2	1,200	1,200	320	30	15	175	65
1.8	20	2.1	280	2.6	1,200	1,200	355	15	19	200	75
1.7	20	2.1	260	2.6	1,200	1,200	340	15	16	200	75

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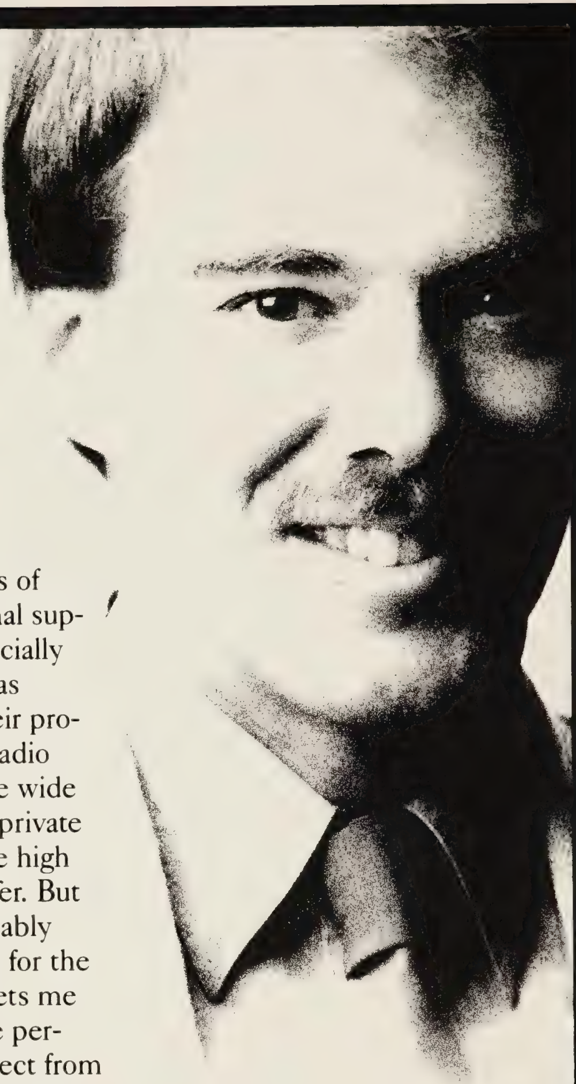
13. Food and Agriculture Organization. Requirements of Vitamin A, Iron, Folate, and Vitamin B_{12}. Report of a joint FAO/WHO expert consultation. FAO Food and Nutrition Series Number 23. Food and Agriculture Organization. Rome. 1988.
14. Elsborg L, Lund V, Bastrup-Madsen P. Serum vitamin B_{12} levels in the aged. Acta Med Scand. 1976;200:309–14.
15. Morley JE. Nutritional status of the elderly, Am J Med. 1986;81:679–95.
16. Bunker, op. cit.
17. Suter, op. cit.
18. Suter, op. cit.
19. Webb AR, Kline L, and Holick MF. Influence of season and latitude on the cutaneous synthesis of vitamin D_3: exposure to winter sunlight in Boston and Edmonton will not promote vitamin D_3 synthesis in human skin. J Clin Endocrinol Metab. 1988;67:373–78.
20. Suter, op. cit.
21. Lamy PP. Drug-nutrient interactions in the aged. In: Watson RR, ed. Handbook of Nutrition in the Aged. Boca Raton: CRC Press, Inc. 1985:266.
22. Morley, op. cit.
23. Walden O. The relationship of dietary and supplemental calcium intake to bone loss and osteoporosis. J Am Dietetic Assoc. 1989;89:397–400.
24. Allen LH. The role of nutrition in the onset and treatment of metabolic bone diseases. In: Weininger J and Briggs GM, eds., Nutrition Update, Vol. 1. New York: John Wiley and Sons. 1983:263.
25. Riggs BI, et al. Effect of the fluoride/calcium regime on vertebral fracture occurrence in postmenopausal osteoporosis. N Engl J Med. 1982;306:446–50.
26. Chen L, Cohen M, and Bhagavan HN. Vitamin C and the elderly. In: Watson RR, ed. Handbook of Nutrition in the Aged. Boca Raton: CRC Press, Inc. 1986:176.
27. Garry PJ, Goodwin JS, Hunt WC, and Gilbert BA. Nutritional status in a healthy elderly population: Vitamin C. Am J Clin Nutr. 1982;36:332–9.
28. Monsen, op. cit.



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USP DRUG PRODUCT QUALITY Review
A PUBLICATION OF THE USP DRUG PRODUCT PROBLEM REPORTING PROGRAM

No. 11

THE FACTS ON OVERFILL

Numerous health professionals from across the nation have reported cases where a vial did not deliver the volume of injectable medication stated on the label. The reporters have questioned both overfilled and underfilled vials. Two reporters were particularly concerned about a 0.1 mL short-fill for Morphine Sulfate Injection, while another reporter questioned an extremely large overfill for this product.

Some reports addressed powders for injection which must be reconstituted prior to use. Reporters brought forth a variety of interesting questions. For example, differences were observed in the amount of powder that the vials appeared to contain. One reporter questioned whether the amount of inactive ingredients present in the vials should account for such a difference. Two reporters relayed concerns about Nitroprusside Sodium Injection. The reporters stated fluid remained in the 2-mL vial, but only 1.7-1.8 mL was able to be withdrawn for use. Reporters also questioned if there is indeed an overfill allotted for this type of dosage form.

• • •

USP REVIEW

In general, liquids are labeled by volume and powders for reconstitution are labeled by weight. According to regulations under the Food, Drug and Cosmetic Act (21 CFR 201.51), the label is to bear "an accurate statement of the quantity of contents". For injections in ampuls or vials, the labeled amount is considered to be the *minimum* quantity of injectable drug present in the container. Any excess above this quantity is required to comply with the recommendations of the *USP-NF*. The targeted excess is not required to be stated on the label or in the labeling.

The General Chapter on Injections in *USP XXII* provides packagers with a "Recommended Excess Volume" chart which is intended to provide for adequate overfill. Note the difference between the suggested volume for a mobile versus a viscous liquid; viscous liquids necessarily require a greater volume of excess fill. The *USP* states that the excess volume is "usually sufficient to permit withdrawal and administration of the labeled volumes".

One firm changed its overfill as a result of a report filed through the Drug Product Problem Reporting Program. The firm stated that, although their previous excess volume had complied with *USP* recommendations, this volume was increased to provide easier withdrawal of the full amount of the medication.

	Recommended Excess Volume	
Labeled Size	For Mobile Liquids	For Viscous Liquids
0.5 mL	0.10 mL	0.12 mL
1.0 mL	0.10 mL	0.15 mL
2.0 mL	0.15 mL	0.25 mL
5.0 mL	0.30 mL	0.50 mL
10.0 mL	0.50 mL	0.70 mL
20.0 mL	0.60 mL	0.90 mL
30.0 mL	0.80 mL	1.20 mL
50.0 mL or more	2%	3%

USP XXII p. 1471

Injectable powders for reconstitution present a different problem. To date, there is no *USP-NF* standard for overfill, nor for the way the final concentration, after reconstitution, must be expressed. Some manufacturers provide specific directions for reconstitution and state an exact concentration of drug per mL in the final solution. Other manufacturers are more vague in the information they provide. Often the package insert states an approximate concentration of the reconstituted solution on a mg/mL basis.

Injectable powders for reconstitution usually contain an overfill. This overfill is allowed by the Food and Drug Administration (FDA), usually in the NDA/ANDA for a drug product. Normally, the approved amount of overfill for injectable powders is expressed as an acceptable range. For example, an NDA may approve an overfill of 5-15% of the total drug weight. An overage may become therapeutically significant if the directions for reconstituting the drug are ignored by the dispenser, or if the vial is not used as intended.

There may be differences in the apparent amount of powder the vials contain even amongst those from the same lot. Pharmacists must remember that this powder is probably measured at the manufacturing site by weight, not by volume. While it is prudent to be alert for such discrepancies, one must also be aware that the powder may settle somewhat during shipping.

Pharmacists must always be alert to the overfill normally present in all injectable drugs. It may be wise to inform other healthcare personnel about the facts on overfill. Assume that the manufacturer has put in an excess to allow you to withdraw fully the amount shown on the label. If the instructions for reconstitution are not absolutely clear, check with the manufacturer. Do not "wash out" a vial, unless the label so instructs; you may wind up with a dose that exceeds the labeled quantity, and sometimes by significant amounts!

To report drug product problems or for further information, call the USP DPPR Program at 1-800/638-6725.

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Issued 3/90

S.T.37
ANTISEPTIC
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Acryline 2
Plate weld
Asthmahaler
Liquiprin
Aqua Care
ORNEX
Amitone
Rose Milk
SERUTAN
Congestac
Femiron
Holds

Menley and James Laboratories have announced a purchase agreement for 32 of SmithKline Beecham's OTC medicines and toiletries. M&J Labs plans to provide retailers with full-year advance promotional plans to help them preplan their retail advertising and merchandising support programs.

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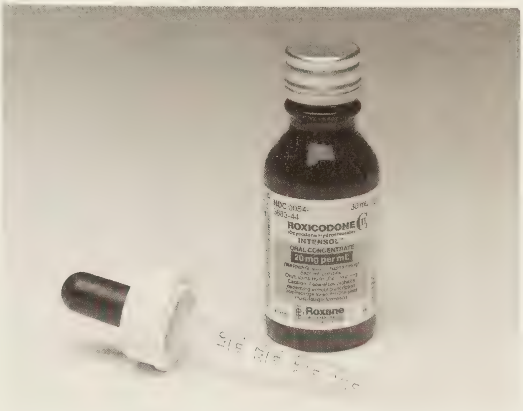
Solar Shield
15
Moisturizing Sunblock Lotion
4 fl. oz.
Paba Free
Waterproof
Solar Shield
30
Moisturizing Sunblock Lotion
4 fl. oz.

Dioptics Medical Products, a leading sunglass manufacturer, has recently announced the addition of a new sunblock lotion to its line of sun products. Called SolarShield Sunblock, the new lotion protects the skin with SPF of 15 or 30 from all damaging UVA and UVB rays.

Judith A. Leister of Westminster (center) poses with other nominees from this year's Pharmacy Achievement Scholarship: Ann Mullen (second from left), Tuan Tran (second from right) and Michael Thomas (far right). Presenting the scholarship on behalf of the MPhA, MSHP, and the School of Pharmacy was Marvin Oed, director of the University of Maryland School of Pharmacy's PEP program.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Continuing Education Quiz

The Maryland Pharmacist **JULY, 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by October 31, 1990. A continuing education certificate for one contact credit will be mailed to you within 30 days. Please type or print clearly.

Name ______________________________

Social Security Number ______________________________

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Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? ____________ minutes

Home Testing Products: Part I

1. Of the following, which substances are NOT readily excreted in urine by the kidney?
   a. Acids
   b. Protein
   c. Sodium
   d. Urobilinogen

2. In case of overdose with salicylates, renal excretion is enhanced by making the urine:
   a. acidic.
   b. alkaline.

3. The term that refers to the presence of intact blood cells in urine is:
   a. hematuria.
   b. occult blood.
   c. hemoglobinuria.
   d. myoglobinuria.

4. Increased excretion of albumin is most likely indicative of:
   a. coronary disease.
   b. hepatic disease.
   c. mental disease.
   d. renal disease.

5. The action of which of the following urinary anti-infectives is LEAST likely to be inhibited by an alkaline urine?
   a. Methenamine salts
   b. Mandelamine
   c. Noroxin
   d. Urex

6. The substance tested for in urine that is formed in the intestine by action of bacteria on bilirubin is:
   a. albumin.
   b. hemobilinogen.
   c. phenylketones.
   d. urobilinogen.

7. The test strips that are yellow when negative and blue when positive, and which contain a citrate buffer to maintain pH at 3 is:
   a. Albustix®.
   b. Clinistix®.
   c. Hemastix®.
   d. Ketostix®.

8. Consumers purchasing a combination strip test should be advised to remove the first drop of urine by touching it to the side of the container to prevent the "runover" phenomenon when the strip contains an area to test for:
   a. blood.
   b. glucose.
   c. pH.
   d. sodium.

9. Patients with phenylketonuria should be warned against ingestion of food, drugs, or drink that contains which of the following substances?
   a. Aspartame
   b. Phenylpropanolamine
   c. Sugar
   d. Tartrazine

10. The average pH of the urine is:
    a. 3.5.
    b. 5.5.
    c. 7.5.
    d. 9.5.

Classified

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THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Harold Catcoff at 358-7036

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Governor Schaefer
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AUGUST, 1990 VOL. 66 NO. 8

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On the Cover: Governor Schaefer declared June 17–23, 1990 Maryland Pharmacists Week in a proclamation ceremony in Annapolis on June 4, 1990. Representing MPhA were President Nathaniel Futeral, President-Elect Mark Levi, Treasurer Ron Sanford, Vice-President Ilene Zuckerman, and Executive Director David Miller. MSHP representatives were Michael Gum, Paul Weidle, Suzanne Cronquist, and Rita Mitsch.

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WHY?

This was the only question on a final exam in a university level philosophy course. After much deliberation and careful thought, most of the professor's students went into a long discourse to give a correct answer, that is all but the student who finished in a couple of minutes of time. His answer was simple and very correct. His answer was—Why not?

This leads me to ask all of you *why not?* Why not volunteer to help your community and profession? It is easy to pass off the problems of our profession to lack of good leadership. It is just as easy to put your head in the sand when a senior citizen gets their medicine from a voluntary mail-order pharmacy.

We as a group have to become more active and volunteer our services for the community. Where there are senior citizen centers, we must stress what values a community pharmacist has. When there are nonprofit groups such as the Diabetes Association or Arthritis Foundation, we must volunteer to help so these people can depend on seeing a familiar face. Pick a cause and volunteer to help. This is not only professionally sound, but can be very gratifying.

When work has to be accomplished at the Maryland Pharmacist Association, it is not an easy feat to find enough volunteers who will give of their time. So few have taken us so far that it would be interesting to see what a few more minds would have done. Employers or employees, community or hospital, we all have a stake in our profession. So call us up and ask to help. The student who finished in a minute got an ''A'' on the paper so when asked the answer should be—why not?

Mark Levi, P.D.

President

Continuing Education

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Understanding OTC Home Testing Products: Part II

by J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

and

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

Goals

The goals of this lesson are to:

1. review the properties of selected home testing products;
2. discuss the mechanism of reaction of these products, and their uses and limitations; and
3. present important consumer information that assures these products will be used correctly.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from

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Objectives

At the conclusion of this lesson, participants should be able to:

1. select the mechanism of reaction, uses, limitations, and causes of false-positive and false-negative results for products discussed;
2. choose the correct pathologic consideration when specific end points of home testing products are stated; and
3. demonstrate an understanding of specific advice to convey to consumers to assure that the products are used correctly.

In Part I of this series, the overall scope of selected home testing products and reasons for their growing popularity were discussed. Featured products included urinalysis tests for protein, pH, blood, bilirubin, urobilinogen, and phenylketones.

In this lesson, the remaining miscellaneous products and projections for the future of home testing products will be discussed. Kits to test for ovulation, pregnancy, urine glucose and ketones, blood glucose, and occult fecal blood were discussed in other lessons.

Background

Not too long ago, the fever thermometer was about the only testing device available to detect an illness at home. Americans who wished to be self-reliant had no reliable methods to assess possible medical conditions. Of course, they could visit a physician who diagnosed their afflictions and recommended proper treatment.

In recent years, Americans reaffirmed their determination to be more reliant on their own self-care, and less dependent on organized medical assistance. Part of this interest is due to increasing financial burdens and fixed incomes that do not permit unlimited visits to health care professionals.

Overall, manufacturers are making it easier for us to take care of ourselves by providing products that are relatively easy to use, give reliable and reproducible results, and are inexpensive as compared to the cost of clinical diagnosis.

Home testing products are reliable. But they are not foolproof! They may show positive results when nothing is wrong (false-positive response). They may fail to detect a condition when it actually exists (false-negative response). The products are subject to the same influences as professional tests.

Home testing products are used by individuals who generally have limited knowledge about them. Label instructions are basically complete, but often difficult to comprehend.

It is common for tests to be accurate 95 to 98 percent of the time if the users are counseled on the correct use. Making sure that consumers use these products correctly is the precise role of the pharmacist.

OTC Urinalysis Testing

Urine Collection. The proper collection procedure for obtaining a urine sample is one of the most important aspects of urinalysis. Pharmacists should assure that individuals who self-test their urine understand the procedures, and correctly follow them. Urine samples that are carelessly collected or stored cannot be expected to provide a high degree of reliability.

There are several urine sampling techniques that consumers may be directed to follow. A **clean-catch specimen** is a midstream catch obtained in a container which is clean and free of microorganisms, after the external genitalia are carefully cleansed.

A **fasting specimen** is the second sample that is collected at least four hours after a meal. A **first morning specimen** is one that is voided on arising in the morning. A **midstream specimen** is collected by passing a container into the urine stream approximately one-half way through the voiding process.

The **moisten-in urine stream** is ideal for tapes or strips. The product is held in the urine stream after some urine is voided. A **random specimen** is collected anytime during the day or night. And, a **twenty-four hour specimen** is a collection of all urine voided over the 24 hours beginning after a first morning void.

The condition of the collection container is extremely important for all tests that use urine as the medium. It must be clean and free of contamination. Ideally, it will be disposable. If disposable equipment is not available, the container should be washed, rinsed well, and carefully dried before each use.

Consumers should be reminded to collect urine specimens at the recommended time for analysis. If the individual cannot test the sample until noon, it may be unwise to collect it at 8:00 a.m. An exception is when the test specifically directs that a first morning sample be obtained, e.g., a pregnancy test. Since a diurnal or rhythmic variation in many urinary constituents is noted over the day, it is important that all patients who do routine urinalysis perform the tests at the same time each day.

Tests For Urinary Tract Infection

Turbidity and foul odor of urine have been associated with illness for centuries. However, it was not until the mid-19th century that these were correlated with bacteria. More recently, easy-to-use tests have been developed to detect the presence of bacteria in urine.

Freshly formed urine is normally sterile since it is a direct filtrate of blood. However, it may contain a modest number of bacteria upon voiding. Abnormally high bacteria levels in urine (bacteriuria) are associated with a positive diagnosis of urinary tract infections (UTIs). The most common pathogens are gram-negative organisms of the *Escherichia coli* group. Infections of the urinary tract are the most prevalent of all human bacterial infections.

Most UTIs occur from movement of bacteria into the bladder and kidneys from outside the body. In other words, bacteria enter the external genitalia and proceed upward along the urethra into the bladder. They then may enter the ureters to reach the kidneys. In other cases, UTIs are caused by the spread of bacteria from other organs or tissue via the blood. In these instances, bacteria are filtered through the kidneys to be excreted through the urine. Bacterial endocarditis is an example of such a disease process.

A diagnostic test for urinary tract infections is called Microstix-Nitrite. The product uses strips which detect nitrites in urine. Detection depends upon bacterial conversion of nitrates from dietary metabolites to nitrites in the bladder. A midstream sample of first morning urine is obtained while being careful not to contaminate the collection container. A test strip is dipped into the urine. Any nitrite present will react with p-arsanilic acid on the test strip to form a diazonium compound which in turn reacts with N-(1-naphthyl)-ethylenediamine from the strip to form a pink color within 30 seconds. Detection of nitrites implies, but does not substantiate, the presence of bacteria. The test is neither qualitative nor quantitative.

A proper method of using the product is to begin testing urine on the first day after completing therapy for UTI, then continue testing for two more days. If the strip is negative on three consecutive first-morning urine samples and the individual does not complain of symptoms of infection, therapy is considered successful and the infection cured. If one or more of the three tests shows a positive response, the test should be regarded as positive for infection. Therapy should then be continued as directed by the physician.

Any degree of color change is interpreted as a positive reaction since the urine contains a million or more organisms per milliliter. A negative reading, however, does not rule out bacteriuria. Some UTIs are caused by pathogens that do not convert nitrates into nitrites, and, therefore, they do not test positive.

Microstix-Nitrite is reported to detect Gram-negative bacteria approximately 94 percent of the time when testing for three consecutive days gives positive readings. This assumes that urine has incubated in the bladder overnight. Testing should therefore be done on a first-morning specimen.

A couple items can cause false-positive test results. As little as 250 mg ascorbic acid taken within 10 hours of the test can reportedly reduce sufficient urinary nitrate to nitrite. The urinary analgesic phenazopyridine (e.g., Pyridium) can impart a red-pink color to the urine which can be interpreted as a positive test result.

As a side note, but still of some interest, a pharmacy professor once asked his students on a midterm exam to "Tell me what you know about nitrates." One student reportedly answered, "They're cheaper than day rates!"

Other Tests

In addition to tests and test products discussed in this lesson, there are many others that use urine samples. Table 1 lists a representative group of these products.

Calcium. Urinary calcium can be readily detected with the product Urine Calcium Screening Test. The test is valuable to individuals, such as premenopausal women, who wish to assure that calcium ingestion is adequate. A test result of 100 to 250 mg calcium per deciliter urine means that ingestion is adequate.

Sodium. Persons with hypertension and other diseases of the cardiovascular system are often placed on low salt (sodium) diets. A home testing product called Saltex permits these persons to monitor salt intake. Dietary ingestion can be easily and reliably determined with this product.

Sulfite. A reagent strip called Sulfitest is used to test for the presence of sulfites in foods and beverages. Touching the product to the food or product identifies whether or not sulfites are present. There are an estimated 0.5 to 1 million asthmatic Americans who are sensitive to sulfite agents.

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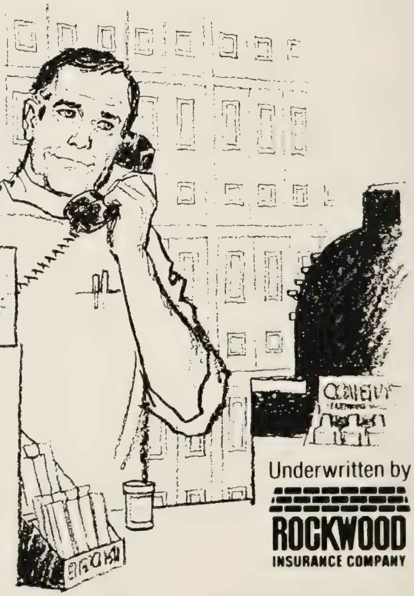

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Table 1

Representative Examples of Home Testing Products

GLUCOSE, BLOOD		
Chemstrip bG	Boehringer Mannheim	
Dextrostix	Ames	
GlucoScan	LifeScan	
Glucostix	Ames	
Visidex II	Ames	
MISCELLANEOUS		
Ictotest	Bilirubin	Ames
Microstix-Nitrite	Bacteriuria	Ames
MPS Papers	Mucopolysaccharides	Ames
Nitrazine Papers	pH	Squibb
Phenistix	Phenylketonuria	Ames
Sulfitest	Sulfites	Center Labs
Urine Calcium Screening Test	Calcium	Preventa/Pak
Urobilistix	Urobilinogen	Ames
OCCULT BLOOD		
CS-T	Helena Labs	
Early Detecatest	Fleet	
EZ-Detect	NMS	
Fleet Detecatest	Fleet	
Hemoccult II	Smith Kline	
OVULATION		
Clearplan	VLI	
OvuSTICK	Monoclonal Antibodies	
First Response	Tambrands	
Fortel Ovulation Test	NMS	
PREGNANCY		
Advance Test	Advanced Care	
Answer	Carter	
C&T	Healthcheck Corp	
Clearblue	VLI	
Daisy 2	Advanced Care	
e.p.t. Plus	Warner-Lambert	
First Response	Tambrands	

The Future of Home Testing Products

Currently marketed home testing products represent only the tip of the iceberg. Their future growth seems unlimited! For example, small microprocessor chips contained in disposable, compact units are reported to be in the developmental stage. A typical unit consists of such a chip, along with a single-use battery and light bulbs. A throat swab would be placed in an incubation tube within the unit. After a prescribed interval, the unit would respond via blinking light to indicate whether a streptococcal infection was present. The patient could then decide whether or not to seek treatment.

Monoclonal antibody technology will certainly continue to develop. While an indepth discussion of the topic is beyond the scope of this lesson, one of the most significant developments in immunodiagnostic chemistry has been the ability to manufacture monoclonal antibodies. Through gene-splitting techniques, it is now possible to produce a limitless supply of these hybrid cells which are designed to recognize individual chemical substances. Their importance in home testing procedures is that they are extremely selective and accurate, and detect small quantities of substances that cannot currently be identified by other means. This has stimulated development of tests that are not only easy to perform, but also give reliable and reproducible results.

It is estimated that over 200 such test kits are already used in clinical labs. Laboratory tests that are currently available only for professional use may eventually be approved for home use.

Some include tests for common sexually transmitted diseases such as *Chlamydia trachomatis* and herpes simplex viruses, and tests for detecting various cancers of the breast, colon, lung, and prostate. They also include tests for determining blood levels of drugs that have a narrow therapeutic index, such as digoxin, theophylline and anticonvulsants. Using these tests at home would enable persons on chronic drug therapy to monitor drug levels and modulate dosage as needed.

Other promising products test for ethanol, vitamins and minerals, and other nutrients. Tests for substances of abuse, such as marijuana and cocaine, are also being developed. One test, called Aware (American Drug Screens, Inc.), permits parents to check their children's urine for these and other chemical substances. Similar easy-to-use tests for leukemia, kidney disease, hepatitis, and glaucoma are also reported to be in various stages of development.

Test for the AIDS Virus

At least two products have been developed that test for the HIV (AIDS virus) antibody. They involve obtaining a blood sample on a filter paper via finger prick, then sending it through the mail to a laboratory that would analyze it and report results back to the sender. Their manufacturers, and some consumers, have appealed to FDA for approval to market them for home use. The agency is studying the request.

There are at least three fundamental issues reportedly delaying a decision. The first is that there is considerable

Table 2

Summary of Important Points in Using Home Testing Products*
For test kits that contain chemicals, note the expiration date of testing products. Beyond that date, chemicals may lose potency and affect results. Don't buy or use a test kit if the date is past.
Consider whether the product needs protection from heat or cold. If so, don't leave it in the car trunk or by a sunny window. Follow all storage directions.
Study the package insert. First read it thoroughly to get a general idea of the test. Then, go back and really study the instructions and pictures until you fully understand each step.
If something isn't clear, don't guess. Consult a pharmacist or other health professional. Or, check the labeling for the company's toll-free "800" number.
Learn what the test is intended to do, and what its limitations are. Remember, the tests are not 100 percent accurate.
If color is a part of the test and you're color-blind, be sure someone who can discern color helps you interpret the results.
Note special precautions, such as avoiding physical activity or certain foods and drugs before testing.
Follow instructions exactly, including the specimen collection process, if that is a part of the test. Sequence is important. Don't skip a step. If a step to validate the test or calibrate an instrument is included, do it.
When collecting a urine specimen — unless you use a container from a kit — wash the container thoroughly and rinse out all traces of soap, preferably with distilled water, which is generally purer than tap or other bottled water.
When a step is timed, be precise. Use a stopwatch or a watch with a second hand.
Note what you should do if the results are positive, negative, or unclear.
Keep accurate records of results.
As with medication, keep test kits that contain chemicals out of the reach of children. Promptly discard used test materials as directed.

*From: *FDA Consumer*, February, 1986

public and professional sentiment against sending blood samples through the mail. Second, opponents of home testing products declare that consumers cannot accurately perform the test. The ramifications of a false-negative test result could be deadly. Third, there is fear that if the result is positive, the individual might not receive proper counseling and follow-up treatment.

There is, for now, probably little chance that home testing products for AIDS will be approved. Rather, the tests will be restricted to use by health care professionals.

Home Cholesterol Testing. There is a definite market need for a do-it-yourself test for blood cholesterol. So far, none are available, and none appear to be in development for use in the immediate future. One market analyst estimated availability by 1992 or later. Others, however, state that such tests are close to development.

The future looks bright. As the experts on these products and the most respected and accessible health care professional, pharmacists are in an advantage position. We can inform the public about these products, and take full advantage of the many opportunities this burgeoning market/health care concept offers.

Pharmacists can recommend home testing products with confidence. The products give reliable results when testing is performed correctly. In addition to specific directions for use on product labels, most need further clarification. Consumers should, therefore, be instructed on their proper use. They should also be made aware of the products' limitations.

Pharmacists who agree with the concept of home testing and envision future expansion as a great opportunity may want to act now. To take advantage of it, it is important to plan strategy now! As nonpharmacy outlets continue to expand promotion and sales of home testing products, pharmacy sales will continue to decrease proportionately. What was near a 100 percent market share in 1984 had declined to 75 percent by spring 1988. Pharmacy's share may be even less today. There is a fundamental strategy for retaining what is left, and regaining at least part of that which has been lost. That is, for pharmacists to inform consumers that they are willing and able to supply a full line of the products, and more importantly, to provide one-on-one counseling.

One way to provide such counseling is to start a file of articles such as this. Manufacturers can supply pamphlets and brochures on their products. Product advertisements containing illustrations on how to use the tests are also useful in counseling.

A word of caution needs to be stated. It should not be inferred to consumers that the result of any home test is diagnostic for a particular condition or event. Rather, consumers should understand that results are only that — results of a test. They should be conveyed to a physician who can then make a diagnosis.

The time is right to get more involved in the marketing of home testing products. Good marketing includes providing a full line of products, and counseling consumers on their correct use.

Table 2 summarizes important points for consumers who use home testing products.

Dickinson's Pharmacy

by Jim Dickinson

Let's encourage PCS. Can you lay your prejudices aside for five minutes? Something very imaginative, and potentially very positive, is happening at big, bad PSC.

Bob Johnson, former pharmacy lion at the California Pharmacists Association, where he shone brightly for 20 years as executive vice president, is now chomping on a far tougher mouthful as chairman and chief executive officer of PCS.

That's why you should reconsider what PCS has previously meant in pharmacy, and contemplate what Bob is trying to do there.

It's early days yet, and he has to juggle new PCS corporate goals with professional development goals he has formed in very close collaboration with national pharmacy leaders, but Bob is striving to set up an interactive, patient-oriented pharmacy network.

With 45,000 PCS pharmacies already on the ReCap automated pharmacy claims system, he's in an ideal situation to do that—and in the process to corral the managed-care herd that's been galloping into the mail-order yards.

Simply put, PCS has a bad reputation in more places than just retail pharmacy—managed care programs blame it for encouraging unrestrained prescription waste. Mail-order sharpies have been singing a sexy tune about the endless costs of free-wheeling card programs. Bob has to repair PCS' image in both the payor community and pharmacy.

That will take more than words and slick audio-visual sales presentations of the kind that mail-order plans pitch.

It will take deeds. Which is one reason why a lot of people are feeling a bit sorry for Bob. How can he get pharmacists to deliver *measurable* "value-added" services through PCS that will overcome the perceived, but false, mail-order advantage of a (false) low bottom line?

Bob's working on that with all of the national pharmacy associations. In June, he announced a PCS advisory committee comprising as diverse and powerful a pharmacy group as you could want: APhA executive vice president John A. Gans, NARD executive vice president Charles M. West, NACDS president Ronald L. Ziegler, American Drug Stores vice president Donald Hoscheit, Longs Drug Stores executive vice president Stephen Roath, practicing pharmacists Louis Mitchell (Penns Grove, NJ) and Robert Osterhaus (Maquoketa, IA), California Health Net pharmacy director Robert Navarro, 3PM pharmacy computer president Thomas Cook, and Lincoln National Life Insurance Co. pharmaceuticals director Doug Stephens.

They will tell him some things he doesn't want to hear, and he will probably tell them something of the same kind—but since when did any group of pharmacists ever agree on everything?

When Bob was criticized at NARD's Rexpo 90 in Orlando for choosing one of the individuals on his committee, he told the critic: "We don't get anywhere just talking to ourselves—he's very interested in working with PCS."

To another critic, who wondered how he could turn things around with the sorry track record of pharmacists who won't cooperate, Bob drew loud applause when he commented: "Pharmacists have been their own worst enemies for many years!"

The cynicism of those who think that PCS can't change pharmacy habits enough to make a dint in the mail-order rampage through managed care programs is understandable, based on past experience.

Since my bottom line is me, and I'm alright, why should I give a damn about you? But there are growing signs everywhere that that kind of thinking may be on the way out.

For instance, two weeks before Bob spoke in Orlando the top executives of all the nation's drug wholesalers met in Chicago for what was called a Breakthrough Meeting. With the aid of a firm of expert motivational consultants, they agreed to change their attitudes toward their customers, to become better listeners, and to see the edge of their industry's crisis not as a precipice, but as a place from which to fly.

And after Bob spoke in Orlando, NARD's national PSAO, RxNET, agreed to develop a service package that, hopefully, could give it consultancy input to PCS programs.

Perhaps PCS could market interactive, one-on-one personal pharmacy care against mail-order, providing the paper proof-of-performance that could justify paying more in order to get more?

That's something that also excites APhA, as the professional advocate in pharmacy. "Perhaps we're beginning to all talk the same language," muses APhA executive vice president Gans. He agrees that PCS could be the right vehicle for effective, patient-oriented DUR.

As noted, it's early days yet. But I have a sense that, with an expanded PCS customer base, all linked by ReCap or compatible systems that can eventually (sooner rather than later) report on-line drug-utilization review performance and savings from interactive personal service, mail-order's astronomic soarings will flatten.

I have a sense that high-tech, high-touch pharmacy can only be performed face-to-face, and that eventually (sooner rather than later?), everyone will agree that that's worth paying extra for.

Let's encourage PCS. (Bob didn't pay me a dime for this!)

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1989–1990 MPhA Annual Report

Convention and Trips Committee
Chaired by: Elwin Alpern

Our 1989 convention at the Sheraton in Ocean City, Maryland attracted 40 exhibitors. It was better in attendance than in 1988. The continuing education was well organized and enjoyed by all. Each year we try to add another feature and in 1989 the attendees were treated to lunch each day in the exhibit hall.

Registration $14,122.00
Contributions $11,685.00
Exhibitors $14,760.00
Outstanding Income $8,238.95
Total Income $48,805.95
Total Expenses $35,463.55
Net Profit $13,342.40

Our trip on the Sovereign of the Seas in January 1990 was a most enjoyable experience. Our continuing education was a courtesy of Eli Lilly. The topic was Pharmaceutical services for patients with diabetes. Thanks to the efforts of Dr. Gilbert Cullen of Towson Travel the association made $3,850.00 on this trip. We not only offered discounts to our members, but we also realized a tremendous financial success.

Our next venture was our mid year meeting. Fortunately we attracted over 300 attendees on February 5, 1990 at the Ramada Inn in Annapolis. The continuing education topic of "New Drug Update" was enjoyed by the majority. Although we had double the amount of pharmacists as the previous year we made less profit. We had to book every meeting room available in order to accommodate the throng. We also advertised via 3 mailings as opposed to one mailing the prior year. Therefore, this is the comparison:

1989	1990
$4,959.17	$2,135.63

Financially more attendees is not necessarily better, however your association does not measure success by dollars alone.

For January 1991 we are planning a trip to Puerto Vallarta Mexico. We are pleased to announce a price of $999.00 per person for 8 days 7 nights at the new deluxe beachfront Sheraton Hotel.

President Nathaniel Futeral and Treasurer Ron Sanford celebrate another successful year for MPhA at the 108th Annual Convention in Ocean City.

Survival Fund Report
Chaired by: Elwin Alpern

Our survival fund started out in 1989 as a major accomplishment. This fund was born of necessity.

Over 75 pharmacies and individuals contributed. The formula was and is very simple. Guide your hand when you approach the checkbook and write a check for $250.00 for each 50,000/year of the third party business you do.

Make checks payable to the MPhA Survival Fund and mail to the MPhA office at 650 West Lombard Street, Baltimore, MD 21201.

The fund is to insure the viability of community pharmacies in the state of Maryland in their efforts to serve the public. Initial activites are aimed at unfair practices of some third party programs.

Legal fees related to third-party and HMO activities have put a strain on our survival fund. As the need for legal advice and action increases with more third-party threats to our professionalism and profits, we must have funding to pay for it. We are asking pharmacy. Owners only for the profit from two to three prescriptions a week over a year period.

The survival fund was started in November, 1988. To date we have collected $61,600.00. We have added interest of $4,871.20. We have paid out in legal fees $15,228.80. Therefore, we have a balance of $51,242.40.

It is imperative to build this fund for the future.

Those that have not contributed please stand up and be counted. It is unfair for those that have contributed to be forced to sustain this important fund.

Publications Committee
Chaired by: Melvin Rubin

This has probably been the most interesting and newsworthy year since I have been working with the newsletter. From "covering" the PCS, Blue Cross, and Attorney General threats over requiring collection of copays, to the loss of two directors, to Medicaid reimbursement changes and to whatever else happens after this is written, it had been easy to find stories to write for you.

As always, we have tried to stress information you need, reports of affiliated association activities and member accomplishments when known. Your continued help in sending the office news items is appreciated.

Thanks to Dave Miller for his help in formatting the publication to improve the appearance. In addition to his many other duties, Dave does the final edit of the Newsletter and the publishing.

MPhA Trustee Howard Schiff, Barbara Schiff, and Sandy Lichter of Baltimore enjoy the Annual Banquet Reception sponsored by McKesson—Loewy/District.

Legislative Committee
Chaired by: Arnold Davidov and Nicholas Lykos

The year began in the fall of 1989 when the leadership of MPhA had a meeting with Delegate Don Elliott to discuss our legislative agenda for 1990. Plans were initiated to support the passing of Delegate Elliott's proposed resolution addressing pharmaceutical manufacturers' discriminatory pricing policies.

An initial meeting of the Legislative Committee was then convened at the end of September to discuss charges of the Committee. Plans were laid out for the Legislative Breakfast and procurement of suitable items for the "survival bags." The Committee proposed the retention of Robin Shaivitz for the ensuing year. In addition, a brief review of proposed legislation to be monitored was conducted.

President and Mrs. Futeral with MPhA Trustee Ken Whittemore of Hagerstown.

At the end of November, MPhA hosted a joint meeting with the Maryland Chain Drug Store Association. The agenda consisted of a review of bills and concerns of the Board of Pharmacy, the Department of Health and Mental Hygiene, MPhA, and the chain drug store association. Also, bills that other states were working on and Federal legislation was reviewed. Lobbyists Shaivitz and Goldstein addressed the conclave.

In January 1990, the Legislative Committee met in Annapolis at the office of our lobbyist. At that time we again reviewed the status and position of MPhA on twelve different bills. Final plans were drawn up for the Legislative Breakfast on February 9th and the distribution of the "survival bags" to the delegates, senators, and staff. After adjourning, members of the Committee attended a hearing in the House Environmental Matters Committee to monitor HB 67-Residential Service Agencies.

The Legislative Breakfast on February 9th was a two-part success. At 8:00 am, Maryland pharmacists convened to meet and greet Delegates and Senators. Governor Schaefer, Lt. Governor Steinberg, Comptroller Goldstein addressed the more than 100 attendees. This event presented excellent opportunities for our pharmacists to interact with their electeds. After the Breakfast, the Committee and volunteer members proceeded to visit key staff offices and all delegate and senator offices with this year's expanded "survival bags."

April 18th, after Annapolis closed down, the Legislative committee met to conduct a wrap-up review. Plans were initiated to change our Annapolis visit to a "Pharmacy Day" with the passing out of the "survival bags" in the morning and an afternoon luncheon. Refinements were suggested to improve communications between the lobbyist, staff, Committee members and officials. Summer studies were proposed on some bills and liaison with Med Chi was proposed. The Committee recommended the retention of Robin Shaivitz as legislative consultant for the following year.

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We believe that the most important success of the year was the adoption of House Joint Resolution 9, Delegate Elliott, addressing discriminatory pricing. Maryland is the first state to pass either a resolution or actual legislation. This resolution will help the practice of pharmacy as well as having an economic benefit to the state's Medicaid program.

The issue of triplicate prescriptions was actively addressed by the Committee. It was a very political issue. Sufficient time and space can't be devoted to the many sensitive and complicated issues that arose. However, the outcome was to our satisfaction.

Other important pharmacy outcomes included these bills: HB 67—Residential Service Agencies which passed with our favorable amendments to eliminate dual certification of pharmacists; HB 499/SB 387—Health Insurance Mandated Benefits which protected our anti-discriminatory copayment legislation from last year; HB 683/SB 714—Nurse Midwife Prescribing—which included MPhA language limiting their dispensing abilities; HB 779—Physician Referrals of Patients—Prohibition, which was defeated because of Med-Chi's efforts; HB 845—Shoplifting and Employee Theft—Civil Liability and Penalties was defeated to our disappointment; HB 1191/SB 715—Emergency Legislation—Nurse Practitioners Prescribing passed with MPhA's effort to protect pharmacists dispensing of these prescriptions; SB 129—Board of Pharmacy Continuing Education passed with our support to allow the board to grant waivers or extensions of the mandatory continuing education for relicensure; SB 153—Board Appeals which would have allowed the Board of Pharmacy to appeal adverse court decisions was defeated to protect pharmacists from "double jeopardy"; SB 584—Confidentiality of Medical Records passed with our support; SB 626—Health Insurance—Prepaid Limited Health Services Organizations was defeated by MPhA opposition; HB 351—Pharmacy Assistance Copayment Increase passed, resulting in a copay increase from $1.00 to $1.50—MPhA took a neutral position; SB 395/SB396—Anabolic Steroids would have rescheduled steroids to Class II—this bill was withdrawn by the sponsor. In addition to these, scores of other bills were monitored by the Committee.

We wish to thank the members of the Committee who actively worked for MPhA's legislative agenda, the MPhA staff, our dedicated lobbyist Robin Shaivitz, and finally, President Futeral who pushed us on and on to greater successes.

Professional Affairs Committee
Chaired by: Ilene Zuckerman

The 1990 Professional Affairs Committee was charged with the following:

1) Responsible for Public Affairs, Young Pharmacists Caucus, and Peer Review Committee activities;
2) Recommended actions that affect our profession (e.g., physician dispensing, physician ownership of pharmacies)
3) Act as an investigating Committee on issues that affects the practice of pharmacy.

The Committee met several times this year, and made recommendations to the Board of Trustees for action:

The Association will purchase a portable exhibit that can be displayed at local and national meetings. This display would also be available for members to use. The goal of this display is to enhance the public's awareness of the pharmacy profession and of the Maryland Pharmacists Association.

The activities of The Young Pharmacists Caucus shall be relegated to the Membership Committee, since the goal of the Young Pharmacists Caucus is to increase membership.

The Association shall pursue legislation to prohibit physicians or their immediate family members who have a significant financial interest in a pharmacy from referring patients to that pharmacy.

The Association shall pursue legislation that prohibits physicians from employing pharmacists to dispense prescriptions.

The Association shall pursue legislation that eliminates the statute requiring all pharmacies to have the current edition and supplements of the USP/NF, and instead that the statute shall require each pharmacy to maintain a reference library suitable to the practice setting. It would then be up to the Board of Pharmacy to promulgate regulations related to this statute.

Other activities of the Professional Affairs included:

Peer Review: The Committee is in the process of developing objectives for peer review. This year, the Committee received one complaint from a consumer regarding a pharmacist's pricing policy.

Public Affairs: Philip P. Weiner continues to broadcast "Your Best Neighbor" on radio stations WXYZ/WCAO. Weiner and Gary Magnus are investigating other sources of radio and television public service announcements to promote our profession.

The Professional Affairs assisted in the development of Pharmacists Week, and will continue to increase public awareness of this event in the future.

I would like to thank members of the Committee for their dedication this past year. Our Committee members were Madeline Feinberg, Jerry Fine, Kathy Gauthier, William Heller, Gary Magnus, Gail Rosen, Matt Shimoda, Bradley Thomas, Phil Weiner.

With more than 13 continuing education credits offered, pharmacists filled the seminar rooms at the Ocean City Sheraton Resort.

Annual Report of the Maryland Board of Pharmacy

Milton Moskowitz, Secretary—Treasurer

In compliance with the provisions as set forth in the Health Occupations Article Section 12-205 of the Annotated Code of Maryland, this report is submitted to the Honorable William Donald Schaefer, Governor of Maryland, the Secretary of Department of Health and Mental Hygiene, Adele Wilzack and to the Maryland Pharmacists' Association. This is the eighty-sixth report to the Governor and Secretary and the seventy-fourth report to the Association. The report covers the activities of the Maryland Board of Pharmacy for the period May 1, 1989 to April 30, 1990. This report is also being submitted to the McKeldin Library of the University of Maryland, the Enoch Pratt Free Library, the Department of Legislative Reference, the Hall of Records and the State Library.

MEETINGS

During the year the Board held seventeen meetings, five of which held at the School of Pharmacy of the University of Maryland, for the purpose of conducting examinations for licensure of pharmacists. In lieu of the regular Board meeting in November, a Regulatory Review was held.

OFFICERS AND MEMBERS

The Board consists of the following officers and commissioners: Steve Cohen, President, Milton Moskowitz, Secretary; Ralph Small, Leonard DeMino, Theodore Litwin, William E. Adams, George Voxakis and Dorothy Levi. All of the officers and commissioners are registered pharmacists in the State of Maryland with the exception of Mr. Litwin and Mr. Adams who are consumer (public) members of the Board.

PERSONNEL

The staff consists of Roslyn Scheer, Executive Director; Brenda Askew, Secretary, David Oliver, Secretary, and Tara Bolling, Stenographer Clerk.

EXAMINATION

The Board conducted examinations for licensure of pharmacists during the year. They were held at the School of Pharmacy of the University of Maryland on June 27, 28, and 29, 1989 and September 26 and 27, 1989.

The applicants who were examined in June of 1989 were licensed in July, 1989 which is in F.Y. 1989. There were one hundred and thirty-seven applicants for the Board in June 1989. One hundred and twenty-two passed both the theoretical and practical portions of the examination and were licensed. Fifteen failed the examination.

There were sixty-three applicants for the Board in September 1989 (F.Y. 1989). Forty-five passed both the theoretical and practical portions of the examination and were licensed. Eighteen failed the examination.

Data relative to the June 1990 examination will be given in the next Annual Report.

The pharmacist licensure examination is given in two parts consisting of the following:

Part I—NABPLEX
Part II consists of:
  Laboratory
  Maryland Law
  Federal Law

The NABPLEX and the Federal Law Exam are obtained from NABP. The Maryland Law Exam and the Laboratory Exam were compiled by members of the Board. The Laboratory Examination requires the compounding of four prescriptions per applicant.

As in the past, many pharmacists applied for reciprocal licensure in Maryland in order to accept positions with their employers who have stores in Maryland.

In all cases, an applicant for reciprocal licensure must appear for a personal interview. The entire Board must act on whether or not to grant licensure to such applicants, who must sign an agreement to comply with Maryland's laws pertaining to drugs and pharmacy.

The following table shows the number of pharmacists granted licensure by reciprocity and the number who were certified to be licensed by reciprocity in other states during the past ten years.

Maryland gained 780 pharmacists by reciprocity during the past ten years.

PHARMACY PERMITS

New permits to operate a pharmacy were issued to seventy-two (72) firms as of April 30, 1990.

Of the seventy-two locations that were issued permits, thirteen were name changes. New permits were issued reflecting the changes.

PHARMACY WAIVER PERMITS

In June, 1987, regulations were promulgated under COMAR, Title 10, Subtitle 34, Chapter 17, allowing waiver of full service requirements for recognized pharmaceutical specialties. As of April 30, 1990, the Board issued fourteen (14) new pharmacy waiver permits as follows: four (4) in Baltimore City; and two (2) in Anne Arundel, one (1) in Baltimore County, four (4) in Howard County, one (1) in Montgomery County, and two (2) in Prince Georges County.

MANUFACTURERS PERMITS

New permits to manufacture drugs, medicines, toilet articles, dentifrices, or cosmetics as of April 30, 1990 were issued to two (2) firms.

DRUG DISTRIBUTORS PERMITS

The Board issued twenty-four (24) new permits to distribute prescription drugs as of April 30, 1990.

Incoming Honorary President Paul Freiman (right), wife Phyllis and friends get together at the Health Services North/East opening cocktail reception.

TOTAL LICENSES AND PERMITS

The total number of establishments licensed through the State of Maryland is 1,415 and the total number of pharmacists is 5,511 as of April 30, 1990.

LEGISLATION

The following bills which affect pharmacy either directly or indirectly were enacted by the 1990 General Assembly. These bills must be signed by the Governor to become effective.

SB 129 State Board of Pharmacy—Continuing Education will enable the Board of Pharmacy to grant time extensions for meeting continuing education requirements.

SB 387 Health Insurance—Mandated Health Insurance Benefits—Evaluation: allows setting up a system to review existing and proposed mandated health insurance benefits.

SB 714 Nurse Midwives—Prescribing and Dispensing: provides for prescribing and limited dispensing privileges by nurse midwives and allows pharmacists to dispense these prescriptions.

SB 715 Health Occupations—Prescribers of Medicine: provides for prescribing privileges by nurse practitioners in statue and allows pharmacists to dispense their prescriptions.

HJR 9 Pharmaceutical Manufacturers—Discriminatory Pricing Practices: urges the President and Congress to investigate effects of discriminatory prescription pricing practices and to take necessary action.

HB 67 Residential Services Agencies: requires licensure of persons that operate residential service agencies.

HB 515 The Drug Enforcement Act of 1990: requires applicants and licensees to disclose Controlled Dangerous Substances conviction. If a licensee on probation violates any condition of probation, the Board may take disciplinary action.

COOPERATIVE ACTIVITIES

The Board maintained cooperative activities with the State Department of Health and Mental Hygiene, the University of Maryland—School of Pharmacy, the Maryland Pharmacists Association, the Maryland Society of Hospital Pharmacists, the Chain Drug Group, City, County and State Police and all Boards and Pharmacy Schools throughout the country.

The Board has initiated steps to work with Licensing & Certification to assist them in their inspection of pharmacy services in long-term care facilities.

DISCIPLINARY ACTIVITIES

The Board of Pharmacy receives complaints from the public concerning problems with the Board's licensees. Other complaints were received from the Division of Drug Control, Medical Assistance Compliance Administration, State of Maryland Courts and other

Because safety cannot be taken for granted in H_2-antagonist therapy

AXID®
nizatidine

Minimal potential for drug interactions

Unlike cimetidine and ranitidine,[1] Axid does not inhibit the cytochrome P-450 metabolizing enzyme system.[2]

Swift and effective H_2-antagonist therapy

- *Most patients experience pain relief with the first dose[3]*
- *Heals duodenal ulcer rapidly and effectively[4,5]*
- *Dosage for adults with active duodenal ulcer is 300 mg once nightly (150 mg b.i.d. is also available)*

References

1. USP DI Update, September/October 1988, p 120.
2. Br J Clin Pharmacol 1985;20:710-713.
3. Data on file, Lilly Research Laboratories.
4. Scand J Gastroenterol 1987;22(suppl 136):61-70.
5. Am J Gastroenterol 1989;84:769-774.

AXID ®
nizatidine capsules

Brief Summary. Consult the package literature for complete information.

Indications and Usage: 1. *Active duodenal ulcer*—for up to eight weeks of treatment. Most patients heal within four weeks.

2. *Maintenance therapy*—for healed duodenal ulcer patients at a reduced dosage of 150 mg h.s. The consequences of therapy with Axid for longer than one year are not known.

Contraindication: Known hypersensitivity to the drug. Use with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General*—1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Dosage should be reduced in patients with moderate to severe renal insufficiency

3. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects

Laboratory Tests—False-positive tests for urobilinogen with Multistix® may occur during therapy.

Drug Interactions—No interactions have been observed with theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450 enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increased serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently

Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

PV 2098 AMP [091289]

Additional information available to the profession on request.

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state boards of pharmacy. The wide range of complaints varied in severity. Listed below are statistics concerning the types of complaints for the period of May 1989 through April 1990.

miscellaneous*	29
mislabeled prescriptions	8
incorrect drug dispensed	13
shortages of controlled drugs	4
communication	2
dispensing habits of pharmacist	23
fraud	2
professionally, physically or mentally incompetent	6
pricing	3
freedom of choice	1
Rx not dispensed	3
TOTAL COMPLAINTS	94

*Complaints are on professionalism, store hours, duties of technicians, expired prescriptions, advertising and security of drugs.

During the period of FY 1990, nineteen Orders were issued and distributed for public information involving pharmacists only. These include:

Pharmacist:	
emergency suspensions	1
suspensions	4
suspensions with immediate stay and probation	6
revocation of license	2
full reinstatements	6

During the period of FY 1990, thirty-one (31) pharmacists and two (2) pharmacies were charged with violation of the pharmacy laws. Nineteen of these cases have been concluded (included in the above statistics), which are all pharmacist cases and fourteen are still outstanding.

The Board has one (1) additional outstanding case from the previous year which has not been concluded.

Some pharmacists were convicted of violating more than one statute. Listed below are the types of violations according to the section of 12-311(b) of the Health Occupations Article and the number of pharmacists charged for each:

(4) Provides professional services while using any narcotic or controlled dangerous substance—4
(14) Without first having received a written or oral prescription—7
(20) Is professionally, physically or mentally incompetent—4
(21) Is convicted of or pleads guilty or nolo contendre —3
(23) Disciplined by a licensing or disciplinary authority of any other state—5
(24) Violates any rule of regulation adopted by the Board—1

Trustee Howard Schiff congratulates A. H. Robins Bowl of Hygeia recipient Jerry Fine on his award. Jerry is a past-president of the ASCP and is currently the chief consultant pharmacist with Meridian HealthCare of Towson.

FINANCES

All funds of the Board of Pharmacy are deposited to the credit of the Treasurer of the State of Maryland and disbursements covering the expenses of the Board are paid by voucher by the State Comptroller.

FINANCIAL STATEMENT

The Board of Pharmacy had revenues of $211,595 in 1988 and $202,855 in 1989. The Board of Pharmacy had expenditures of $163,631 in 1988 and $157,587 in 1989. The Board's budget is $181,814 for 1990.

REGULATIONS

The Board promulgated or amended the following regulations:

1. Formal Hearings
2. Examination for Licensure and Internship Programs
3. Transfer of Prescriptions Between Pharmacies
4. Security of a Pharmacy Facility
5. Reporting Pharmacist's Mailing Address and Location of Employment
6. Pharmacy Equipment
7. Reciprocity Fees
8. Standards of Pharmacy Practice
9. Monetary Penalties
10. Reinstatement of Expired Licenses for Pharmacists
11. Closure of Pharmacies
12. Experience Required for Licensure by Reciprocity
13. Parenteral/Sterile Enteral Compounding
14. Prescription Orders Transmitted By Facsimile Devices

CONTINUING EDUCATION

Throughout the year the Continuing Education Task Force has accepted requests for approval of Continuing Education (C.E.) programs, not automatically approved by the C.E. regulations. In anticipation of selecting a random sampling of pharmacists to monitor their C.E. documentation, preparations have been made for the first renewal period that pharmacists were required to have C.E. credits.

The Continuing Education Coordinating Council (CECC) included the Board in programs to redefine the objectives of the Council and train providers in developing C.E. programs with the CECC.

The Board supported the passage of Senate Bill 129, State Board of Pharmacy—Continuing Education, which will allow the Board to grant pharmacists an extension of their license to obtain the required C.E. credits when extenuating circumstances, as determined by the Board, have prevented pharmacists from obtaining the necessary C.E. credits.

SECRETARY-TREASURERS MESSAGE

Steven Cohen, President, and I as Secretary, were elected as officers of the Board for the third year. We appreciate the confidence and support of the entire Board. The Board Commissioners carried out their duties and various assignments with many positive results. The following highlights some of their activities:

Dorothy Levi: serves as chair of the Continuing Education Task Force. She is the resource person for Continuing Education information and approvals. She is also co-chair of the Task Force to review inspection criteria for long term care and institutional pharmacies.

Theodore Litwin: has been very involved in developing criteria for quality assurance for pharmacy services to the public and also with interviewing PEP students and preceptors. In addition, he has testified in Annapolis on a variety of issues. Two bills were SB 129 State Board of Pharmacy Continuing Education and on SB 153—Health Occupations Boards, Administrative and Judicial Review. Ted is a consumer member on the Board.

William Adams: has been instrumental in developing a brochure of consumer rights for pharmacy services and serves as a consumer member.

Leonard DeMino: serves as a member on the Law Enforcement/Legislation Committee of the National Association of Boards of Pharmacy. He has also served on the Board of ACPE representing APhA. Leonard will be gathering information to draft an amendment to the law for substitution of generic equivalents so that pharmacists may substitute as soon as a generic is approved by FDA.

Ralph Small: is our reciprocity expert. He interviews all reciprocity applicants and is chief proctor of the licensing examination.

George Voxakis: serves on the Licensing committee and reviews all inspection reports from Drug Control concerning community pharmacies. George's activity helps assure that appropriate pharmacy standards are met.

Steven Cohen—President—has been exemplary in a special position as chair of the Health Regulatory Boards Steering Committee concerning all of the Health Boards.

There have been so many accomplishments this year. In response to the Regulatory Review and Evaluation Act, the Board updated most of its regulations. In addition, new regulations were promulgated, such as Parenteral/Sterile Enteral Compounding.

A new addition of note is that pharmacists must report mailing address and place of employment. The Board must be notified within 30 days of a change in employment or the pharmacist's mailing address. This will begin with the next license renewal.

A Board task force reviewed the use of FAX machines to transmit prescriptions. The Board drafted regulations which are scheduled for public hearing.

The Board will be developing regulation for pharmacies located out-of-state serving patients in Maryland.

The Board applauds the services of the Pharmacists Rehabilitation Committee for helping in the recovery of pharmacists who have a substance abuse problem. The Board has found the Rehabilitation Committee to be a very valuable resource in monitoring and evaluating pharmacists who are substance abusers.

The Board reviews many license reinstatement requests from pharmacists after they have met their probationary conditions set forth in consent agreements. These requirements are mostly made of pharmacists who have been charged with violating pharmacy practice laws involving substance abuse. The Board is proud and pleased that there have been virtually no repeat offenders after their probation.

Roslyn Scheer, our Executive Director, has demonstrated her abilities and judgment during her 11 years in that position. She brings a special dimension and perspective to the public of Maryland on national pharmacy issues, since she is an Executive Committee Member of the National Association of Boards of Pharmacy. She serves as an excellent organizer and manager in assisting staff and all Board members.

As for myself as Secretary and Board member, it is a special privilege to serve the citizens of the State of Maryland. The work load never ceases, but it is our mission to be the advocate for safe pharmacy practice through education and voluntary compliance whenever possible.

Budget & Finance Committee
Chaired by: Ronald Sanford

The Budget and Finance Committee has met several times since the last convention. A full meeting of the Committee was convened on October 12, 1989 for the purpose of reviewing the projected budget for the 1990 fiscal year. The largest budget to date was proposed by the Committee with the assistance of the association bookkeeper, Mary Ann Frank, and David Miller (then serving as Director of Public Affairs and DUR Director). It was decided at this time to recommend to the Board of Trustees to move forward with the computerization of the Association's accounting. Further, the accounts listed on the monthly treasurer's report were redefined, replacing a number of "catch-all" categories with more meaningful accounts. The new treasurer's report reflects the new activity.

Since one of the responsibilities of the Budget and Finance Committee is to conduct a review of the Association health insurance program, several sub-Committee meetings were held throughout the year, commencing with a meeting on November 2, 1989, with Rick Stephans of Stephans & Associates. At that time, it came as no surprise that the Blue Cross program was no longer an option. Stephans had made provisions to move our insured to the HealthPlus Select program because it most closely resembled the coverage then currently provided. Subsequent to that meeting several meetings were held with other health insurers. Most notably the APhA Pharmacists Insurance Trust. When learning of our experience rating and the relative age of our group, we continue to face lack of insurability for our group. Since our negotiations were taking place without a full-time Executive Director, it was decided to defer any further exploration until a full time Director was appointed. The health insurance subCommittee will be reactivated after convention.

In addition, under the auspices of the treasurer and approved by the Board, a new expense reporting form has been put into use, a comprehensive office personnel manual has been developed and is currently in final review. Finally, the automation of the accounting is complete and all major financial reporting is now automated. Smaller accounting functions will continue in a manual mode.

I would like to extend my thanks and the thanks of the Association for the help and assistance of my Committee members: Nicholas Lykos, Melvin Rubin and Kenneth Whittemore. Special thanks also to David Miller.

MARYLAND PHARMACISTS ASSOCIATION, INC.
650 W. Lombard Street
Baltimore, Maryland 21201

Exhibit A

Balance Sheet
As of December 31, 1989

	GENERAL FUND	SCHOLARSHIP FUND	KELLY MEMORIAL FUND	MARYLAND PHARMACEUTICAL FOUNDATION FUND	COMBINED
ASSETS					
Cash—Checking	$ 13,306.61	$	$	$	$ 13,306.61
—Savings	23,899.58	812.68	823.43	1,084.31	26,620.00
T. Rowe Price Prime Reserve	5,801.00	11,607.57	1,919.47		19,328.04
Signet Bancorp. Stock at Cost	715.00				715.00
Maryland National Bancorp. Stock at Cost				532.00	532.00
Signet—Money Market	65,877.41				65,877.41
Accounts Receivable	23,271.85				23,271.85
Prepaid Expenses	1,889.87				1,889.87
Total Assets	$134,761.32	$12,420.25	$2,742.90	$1,616.31	$151,540.78
LIABILITIES AND FUND BALANCES					
Accounts Payable	$ 6,674.79	$	$	$	$ 6,674.79
Prepaid Dues	50,026.50				50,026.50
Prepaid Convention Income	4,750.00				4,750.00
Payroll Taxes	1,200.35				1,200.35
Fund Balance (Per Exhibit C)	72,109.68	12,420.25	2,742.90	1,616.31	88,889.14
Total Liabilities and Fund Balance	$134,761.32	$12,420.25	$2,742.90	$1,616.31	$151,540.78

MARYLAND PHARMACISTS ASSOCIATION, INC.
650 W. Lombard Street
Baltimore, Maryland 21201

Exhibit B

Statement of Income
January 1, 1989 to December 31, 1989

	GENERAL FUND	SCHOLARSHIP FUND	KELLY MEMORIAL FUND	MARYLAND PHARMACEUTICAL FOUNDATION FUND	COMBINED
INCOME					
Membership Dues	$116,518.42	$	$	$	$116,518.42
Sustaining Membership	1,500.00				1,500.00
Adm. Services	3,227.27				3,227.27
Interest and Dividends	6,854.13	1,031.88	196.89	191.27	8,274.17
Conv. and TRips	15,852.03				15,852.03
Printing—Adv. and Sub.	36,058.34				36,058.34
Donations—Scholarship		25.00			25.00
Rental	3,600.00				3,600.00
Miscellaneous	7,035.74		10.00		7,045.74
DUR	153,528.00				153,528.00
Rehabilitation Fund	852.93				852.93
MAFDA	5,500.00				5,500.00
Total Income	$350,526.86	$1,056.88	$206.89	$191.27	$351,981.90
DISBURSEMENTS					
Travel	$ 8,786.86	$	$	$	$ 8,786.86
Salaries	144,221.27				144,221.27
Taxes	11,845.92				11,845.92
Employee Benefits	22,078.14				22,078.14
Administrative Expenses	35,796.26				35,796.26
Accounting	1,100.00				1,100.00
Office Expense	8,818.88				8,818.88
Insurance	2,803.00				2,803.00
Utilities	2,954.80				2,954.80
Lobby	10,232.31				10,232.31
DUR	81,225.19				81,225.19
Scholarships		600.00			600.00
Discounts and Fees	795.00				795.00
Printing	28,572.54				28,572.54
SAPHA	800.00				800.00
Maryland Pharmacist	5,848.39				5,848.39
Total Disbursements	$ 365,878.56	$600.00	$ 0	$ 0	$ 366,478.56
Net Income (Loss)	$(15,351.70)	$456.88	$206.89	$191.27	$(14,496.66)

MAFDA Coupon Redemption Report
Chaired by: Mary Ann Frank

The Mid-Atlantic Food Dealer Association (MAFDA) coupon redemption program was started by the association in May 1985. the first year, more than 50 pharmacies joined the program.

Currently 83 stores are participating. Rebates of up to 3 cents per coupon plus a 30 day turn around make the program very attractive. From January 1989 to December 1989, the MAFDA program generated $8,748 in extra income to the MPhA.

One of the areas in which we have advanced is in automation. Thanks to the efforts of Treasurer Ron Sanford, the MAFDA coupon redemption program is now computerized. Participating pharmacies will be receiving a statement of coupons received, processed, and reimbursed with their monthly checks.

Membership Committee
Chaired by: Kathy Gauthier

1989 was a banner year for MPhA membership recruitment. Thanks to a special half-year dues promotion in July and August and work by individual members, MPhA gained 215 new members. This represented our highest membership level since 1982, our centennial year.

As of December 1989, our final membership count was: 191 owner/managers members, 591 pharmacist members, 29 hospital members, 92 retired members, 36 associate members, 12 joint members, 78 out-of-state members, 6 graduate student members, 78 first-year graduates, and 17 second-year graduates. In addition, MPhA had 160 pharmacy student members.

Past President's Council Report
Chaired by: Lee Ahlstrom

The Past President's Council was charged with selecting the scholarship and award winners for the 1989–1990 year. This year, we extensively promoted our scholarship program through the School of Pharmacy and received more than 20 applications.

PEP scholarships are awarded to students who can demonstrate a financial need during the summer months while they do externships. The scholarships are in the amount of $300 each. This year's recipients were Ann Wiland and Stephanie Folb.

The Harry D. Kaufman Award is presented to a student who has demonstrated outstanding dedication and devotion to community service while a student. The award is in the amount of $100.00. This year's selection for the award was Matthew McGovern.

In selecting the annual MPhA awards, the Past President's Council considered nominations from the membership. So many of the nominations were well-qualified and very deserving, making our selection process quite difficult. The 1990 Bowl of Hygiea recipient is Jerome Fine of Towson, Maryland. The 1990 Dedicated Young Pharmacist Award recipient is Gary Magnus of Silver Spring, Maryland. The Seidman Distinguished Achievement Award, given to an MPhA member who has shown outstanding dedication to the profession, is being posthumously awarded to Milton Sappe of Baltimore, Maryland.

Employee/Employer Relations Committee
Chaired by: Kimberly Moore

When asked if I would chair this Committee, I was honored and more than willing to assist the MPhA. When I inquired as to the Committee's duties, I was instructed, from more than one person, to "compile the MPhA Annual Salary and Benefits Survey." Determined, I set out to do something different, but to no avail.

As tradition rules, a survey was once again done. A PEP student, Lisa Langer, was doing a rotation at the MPhA and was assigned the task of coordinating and compiling the survey. Lisa did a superb job. Much thanks to the 241 pharmacists that responded even if it was only an embarrassing 25 percent (worse than the national census but still the highest response rate since we started doing the survey!).

The survey report was printed in the May issue of *The Maryland Pharmacist*. There weren't many surprises. A major complaint from most retail pharmacists was long hours without lunch or breaks. Also, not pharmacists reported that there was not much room for advancement.

I was surprised, however, that across the board, men averaged higher salaries than women. This could be because we compared annual salaries instead of hourly salaries. This is something to consider for next year's survey.

If anyone has new ideas for the 1990–1991 Committee, feel free to comment. Again, thanks to all who participated and we hope to hear from more of you next year.

Nominating Committee
Chaired by: Samuel Lichter

The Nominating Committee gave its report on nominations at the 1990 MPhA Mid-Year Meeting in February 1990. At that time, the House of Delegates approved the following slate of candidates:

President-Elect
Kathy Gauthier
Ilene Zuckerman

Vice-President
Brian Sanderoff
Murhl Flowers

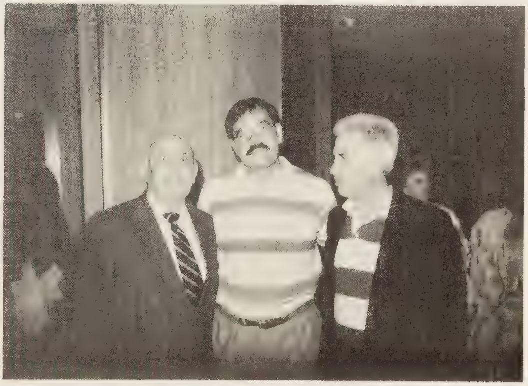
Treasurer
Ronald Sanford
unopposed

Trustee
Jim Tristani
Jim Rutten

Trustee
Gerry Freedenberg
Al Schwartzman

As required by the Constitution and Bylaws, elections were conducted by mail ballot and the results tallied by the Canvassing Committee composed of Howard Schiff, Elwin Alpern, and Arnold Davidov. The results were announced at the April 19, 1990 Board of Trustees meeting and published in the May MPhA newsletter.

The Nominating Committee also nominated three candidates for the opening seat on the Board of Pharmacy. Our prime candidate, Dr. Steven Cohen of Good Samaritan Hospital, was reappointed by Governor Schaefer on June 1, 1990.



Newly elected Vice-Speaker Phil Marsiglia of Phoenix (center) is congratulated on his election by President Futeral and Trustee Arnold Davidov.

Third-Party Committee
Chaired by: Philip Marsiglia

The Third-party Committee has met many times during the past year and has discussed a variety of issues affecting prescription drug reimbursement. Early in the year, attention was directed toward an appeal of the Insurance Commissioner's previous decision to allow Blue Cross to levy a charge for processing their prescription claims. Although the courts upheld the original decision, the charge was reduced to 15 cents and the validity of using AWP as a measure of acquisition cost was reaffirmed.

Undoubtedly the issue demanding the most attention of the Committee has been the proposal by the Medical Assistance Program to change the program's reimbursement methodology. Faced with the possibility of having Federal matching funds withheld by HCFA for their continued use of AWP as a measure of estimated acquisition, the State approached the MPhA with several alternatives which would bring them into compliance. The Committee researched Medicaid programs across the country to determine how other states are complying with the new federal mandate. We held several meetings where we discussed the various options and developed a response which was presented to the membership at a general MPhA meeting in late March. That plan, along with suggestions derived from the general membership meeting were presented to the Director of the Medicaid program. Our proposal was received favorably but the final decision has not yet been made.

The most positive aspect of the Committee's work during the past year has been in the establishment of a closer working relationship with the State's Medicaid Program. Rather than being merely informed of policy changes, our input is sought before these changes are made.

Pharmacists Rehabilitation Committee
Chaired by: Harry Finke

The Pharmacists Rehabilitation Committee was formed in response to a perceived need to establish a middle ground between pharmacists' dysfunction in practice ad license suspension or revocation by the State Board. The Committee contracted its first treatment agreement in October 1983. The purpose of the Committee is to intervene and take appropriate action so that the impaired pharmacists can have a chance to address the dysfunction appropriately and save his or her career, mental and physical well being. The goal is to act as swiftly as possible to insure that the impaired pharmacist obtains proper counseling and medical treatment. Pharmacists who desire the aid of the Committee for rehabilitation must enter into a signed contract with the Committee. Information is maintained in complete confidence, protected by law, separate and apart from any Association of State Board records. Following a successful rehabilitation all records are purged from Committee files.

The Committee is participating with Med Chi and other professional association in planning, structuring and coordinating an interdisciplinary conference on impaired professionals and the role of Rehabilitation Committees in their recovery.

1989 was a very active year for the Committee. There are approximately 27 to 30 active cases being monitored by the Committee and two new cases that will sign contracts by the end of June 1990.

Every member on the Committee has attended the renowned University of Utah School of Alcoholism and Other Drug Dependencies, Special Section for Pharmacist Intervention. This has greatly improved the function of the Committee especially in areas of case management and intervention.

The members of SAMPA, ably led by President Betty Alpern, met in two sessions at the convention.

The Committee has generated approximately $2,000 in 1989 from dues check-offs on MPhA's and MSHP's dues billings. In addition to the support of these members, we would also like to recognize Dupont corporation and Schering Laboratories for their corporate donations. The Committee would like to recognize the support provided by the University of Maryland School of Pharmacy and their assistance in setting up a student intervention team which works directly with the Pharmacists Rehabilitation Committee.

The Committee suffers from geographical limitations because of its central location in Baltimore City. We need viable links on the Eastern shore, Southern and Western Maryland where we know problems exist but we cannot always address the issues because we are hampered by distance and lack of communication links. As more pharmacists become aware of treatment for chemical dependency, the Committee will have an even greater task to accomplish. The minimum chemical impairment rate is 10% and with approximately 3,500 active pharmacists in Maryland, that figure estimates that 350 chemically impaired pharmacists may need our assistance and guidance. This requires financial support and devoted time by those pharacists who care about their fellow professionals. Only with this commitment can our Committee provide the best service to the pharmacists who need help.

In conclusion, the success of the pharmacists who have participated in the Committee intervention process have demonstrated their ability to continue in a viable career and should provide an infusion of optimism regarding the recovery potential of properly treated chemical dependence.

The Committee would like to recognize the volunteer time and effort of the following members: Gil Cohen, Gerry Epley, Harry Finke, Robert Patti, Tony Tommasello, Keith Walters, Milton Moskowitz, Penney Garrett and Patricia Tommasello.

Industrial Relations Committee
Chair: Frank X. Radigan

The Industrial Relations Committee meeting met to discuss several of the issues affecting the industry and the profession.

The Committee reviewed the MPhA legislative initiative to curb unlawful discriminatory pricing practices. Also, Senator Pryor's PAPPA legislation and Merck Sharp & Dohme's Equal Access Payment Program was reviewed.

Members of the Committee also discussed the MPhA DUR program, drug recalls, and return goods policies.

Oversight Committee
Chaired by: Nicholas Lykos

President Futeral formed an Office Oversight Committee to assist the MPhA staff during the transition between executive directors. One of the first goals of the committee was to develop an MPhA Employee Personnel and Policy Guidelines Manual. This manual, recently completed, has just been put into effect by our new executive director, David Miller.

The Committee will be working with the staff to compile handbooks for officers, trustees, and committee chairs to answer many of the questions on policy that arise during the year. In addition, the Committee will be meeting quarterly with the Treasurer to review the detailed transactions and accounts of the office's financial books.

Drug Formulary Committee
MPhA Co-chair: Paul Freiman

Health Occupations Title 12-508 of the Annotated Code of Maryland, charges, inter alia, the Department of Health and Mental Hygiene with distributing the Maryland Drug Formulary which lists those drug products that are identified as being substitutable by the Federal Food and Drug Administration (FDA). Since the FDA Orange Book provides such data, we use it as our resource in order to comply with statutory mandate.

A highlight of the Berlin Fire Hall Crab and Chicken Feast was an appearance by Governor Schaefer. Shown here with Dr. Donald and Mrs. Michaeline Fedder, Governor Schaefer congratulated the pharmacists on the fine work they do for the citizens of Maryland.

As background information, the DFC on September 14, 1989, recommended to John D. Stafford, M.D., Deputy Secretary, Public Health Services, Department of Health and Mental Hygiene, that the Department remove carbamazepine oral tablets 200mg; phenytoin sodium extended oral capsule 100mg; primidone oral tablet 250 mg; valproic acid oral capsule 250mg; theophylline extended oral release tablet 100mg, 200mg, and 300mg, and warfarin sodium 2mg, 2.5mg, and 5mg until such time that the FDA has reviewed all existing bioequivalent, manufacturing, and quality control data and reaffirmed that they are safe, effective, and bioequivalent. The removal of these six drug products only prohibited substitution of the drug products and did not prohibit the sale in the State of Maryland. Secretary Adele Wilzack concurred with the DFC recommendation and on December 27, 1989, the six drug products were removed from the Maryland Drug Formulary. In August 1989, the generic drug scandal broke with news that FDA employees had accepted payoffs from generic drug firms. Shortly thereafter, it became known that a generic company had substituted a brand name drug for its own in crucial tests for gaining drug approval. Then came reports that other firms had also cheated to obtain approvals. Needless to say, the FDA immediately instituted a wide-ranging series of inspections and product sampling, which unearthed further revelations. In any event, the FDA took necessary steps to identify the scope of the problems, to assure the safety of generic drugs in the nation, and to prevent further problems. In view of all of the unfortunate events, it is evident that the Secretary's decision to remove the six narrow therapeutic range drugs was an excellent one. The six drugs which were removed from the Drug Formulary continued to be omitted therefrom. Therefore, they may not be legally substituted.

After the removal of the six drug products, we heard from several companies. In summarizing, the Lemmon Company has submitted data to the DFC in hope of having their carbamazepine readmitted to the Drug Formulary. Probably, by the time you receive this letter, the DFC will have made its recommendation to the Department relative to the status of carbamazepine.

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The way your store is arranged can spell the difference between so-so sales and brisk sales. That's why the Alco Health Services Corporation team of ten highly trained merchandisers makes regular visits to participating stores. Your pharmacy is at its best when Health & Beauty Aid departments contain up-to-date merchandise displayed in the right location, in the right mix, competitively priced with point-of-purchase shelf talkers to reinforce your message to the consumer. After all, the front end of your store can tell a customer a lot about your pharmacy! We coordinate pricing programs, do local competitive price shopping, and conduct total store resets.

Merchandising, signage, private label, advertising programs, and proven marketing techniques from Alco Health Services Corporation give you a competitive edge. Get the total support system.

1990 RESOLUTIONS

RESOLUTION #1

RESOLVED, that the delegates of the MPhA Convention assembled on June 20, 1990, in Ocean City, Maryland, ratify and confirm all official actions of the officers and members of the Board of Trustees of the Maryland Pharmacists Association during the interim since the last convention of MPhA in Ocean City, Maryland.

Resolution Adopted: June 20, 1990

RESOLUTION #2

WHEREAS, it is the responsibility of organized pharmacy to promote the role of the pharmacist as a member of the health care team to the public, and;

WHEREAS, the 1989 House of Delegates passed a resolution supporting a joint promotional campaign to enhance the image of pharmacy and pharmacists by the Maryland Pharmacists Association and the Maryland Society of Hospital Pharmacists, and;

WHEREAS, Governor William Donald Shaefer will be proclaiming the third week in June as "Pharmacist Week" at the 1990 Annual Convention;

THEREFORE, BE IT RESOLVED, that the Maryland Pharmacists Association officially recognize and promote "Pharmacists Week" as an annual joint activity between itself and the Maryland Society of Hospital Pharmacists.

Resolution Adopted: June 20, 1990

RESOLUTION #3

WHEREAS, the 1988 House of Delegates passed a resolution directing the Maryland Pharmacists Association to work in cooperation with the Division of Drug Control to help curb the abuse, misuse, and diversion of prescription medications in the illicit drug marketplace, and;

WHEREAS, the Governor has recently signed an Executive Order charging the Division of Drug Control with the responsibility for developing a system to track such abuse, misuse, and diversion of controlled dangerous substances;

THEREFORE, BE IT RESOLVED, that the Maryland Pharmacists Association reiterates its position of support and cooperation with the Division of Drug Control to accomplish this goal, and; BE IT FURTHER RESOLVED, that the Maryland Pharmacists Association work with the Division of Drug Control to accomplish this goal in a manner that will place minimal burden on practicing pharmacists.

Resolution Adopted: June 20, 1990

RESOLUTION #4

WHEREAS, the Medicare Catastrophic Coverage Act of 1988 has been repealed by Congress, and;

WHEREAS, the private insurance industry has been promoting "Medi-Gap" policies that are designed to provide the elderly with coverage for non-Medicare covered health care services, and;

WHEREAS, several states have seen the necessity to regulate these policies to prevent misrepresentation to the elderly;

THEREFORE, BE IT RESOLVED, that the Maryland Pharmacists Association collect information from its members regarding the pharmaceutical benefits of Medi-Gap type insurance policies offered to Maryland's elderly; and,

BE IT FURTHER RESOLVED, that the Maryland Pharmacists Association inform the Insurance Commission of its findings and assist in the pursuit of legislation that would regulate such policies, if necessary.

Resolution Adopted: June 20, 1990

RESOLUTION #5

BE IT RESOLVED, that the Maryland Pharmacists Association support the move to an all Pharm.D. program by the University of Maryland School of Pharmacy.

Adopted as Amended: June 20, 1990

MPhA secretary Maribeth Porter prepares to eat her 32nd crab at the Berlin Fire Hall. 296 tickets were sold to the event—only 4 short of a total sell-out!

RESOLUTION #5-B

WHEREAS, MPhA has adopted a resolution to support the move to an all Pharm.D. program by the University of Maryland School of Pharmacy, and;

WHEREAS, a number of MPhA members have expressed concern with the potential discrimination that may be experienced between Pharm.D. designated pharmacists and those pharmacists with a B.S.;

THEREFORE, BE IT RESOLVED, that the Maryland Pharmacists Association support the requirement that the School of Pharmacy produce a program in which external Pharm.D. degrees can be obtained by interested B.S. practitioners based upon continuing education programs, experience in practice, and other mechanisms where credits can be earned *outside of* the traditional classroom model.

Adopted As Amended: June 20, 1990

RESOLUTION #6

WHEREAS, the abuse of controlled dangerous substances continues to be a growing national, social and public health problem; and,

WHEREAS, the drug problem continues to grow at epidemic proportions, affecting the lifeblood of our very existence, disrupting the economy of our nation and destroying the lives of innocent individuals, including the defenseless babies born of addicted mothers; and,

WHEREAS, there is a movement both locally and nationally to legalize the distribution of such substances under controlled conditions; and,

WHEREAS, the experimentation of legalization/decriminalization and control in other countries has been a dismal failure;

THEREFORE, BE IT RESOLVED, that the Maryland Pharmacists Association state publicly its opposition to the legalization/decriminalization of *controlled dangerous* substances; and,

BE IT FUTHER RESOLVED, that the Maryland Pharmacists Association participate in any forums, legislative initiatives, or other discussions regarding the issue of legalization/decriminalization of controlled substances.

RESOLUTION #7

WHEREAS, the committees of the Maryland Pharmacists Association carry out the direction of the House of Delegates, and are empowered by the Constitution and By-Laws of the Association; and,

WHEREAS, the members of the committees represent the Association by their actions and by the recommendations of the committees;

THEREFORE, BE IT RESOLVED that all pharmacist members of all standing and ad-hoc committees be active, dues-paid members of the Association, except when otherwise authorized by the By-Laws or special provisions by the Board of Trustees; and,

BE IF FURTHER RESOLVED, that this provision take effect for the committees being formed for the 1990–91 Association year.

Adopted As Amended: June 20, 1990

RESOLUTION #8

Withdrawn by Sponsor: June 20, 1990

RESOLUTION #9

Withdrawn by Sponsor: June 20, 1990

RESOLUTION #10

WHEREAS, pursuant to paragraph XII of the current MPhA By-Laws, the Board of Trustees shall be expanded by three (3) members to nine (9) elected trustees, taking into account a balance of specialty practice areas and geographic areas to accommodate broader representation of pharmacists on the Board of Trustees.

THEREFORE, BE IT RESOLVED that paragraph VII(2) be amended by striking out "fourteen (14) members" to "seventeen (17) members," striking out "six (6) elected Trustees" and inserting "nine (9) elected Trustees." Also, paragraph VII(3) shall be amended by striking "two elected each year" in the first sentence thereof and inserting "three elected each year."

Referred to Committee: June 20, 1990

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3. ARE YOUR HEALTH AND BEAUTY AIDS PRICES COMPETITIVE?
4. IF SO, ARE YOU TELLING YOUR CUSTOMERS?
5. HAS INCREASED THIRD PARTY PRESCRIPTIONS AND COMPETITION AFFECTED YOUR PRESCRIPTION DEPARTMENT PROFIT?
6. ARE YOU TIRED AND CONFUSED FROM SEARCHING FOR THE BEST SOURCE OF SUPPLY, AT THE BEST PRICE, TO FILL YOUR O.T.C. AND PHARMACEUTICAL NEEDS?
7. ARE YOU INTERESTED IN A TOTAL PROGRAM THAT WILL SOLVE ANY OR ALL OF THE ABOVE?

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Scott Richards

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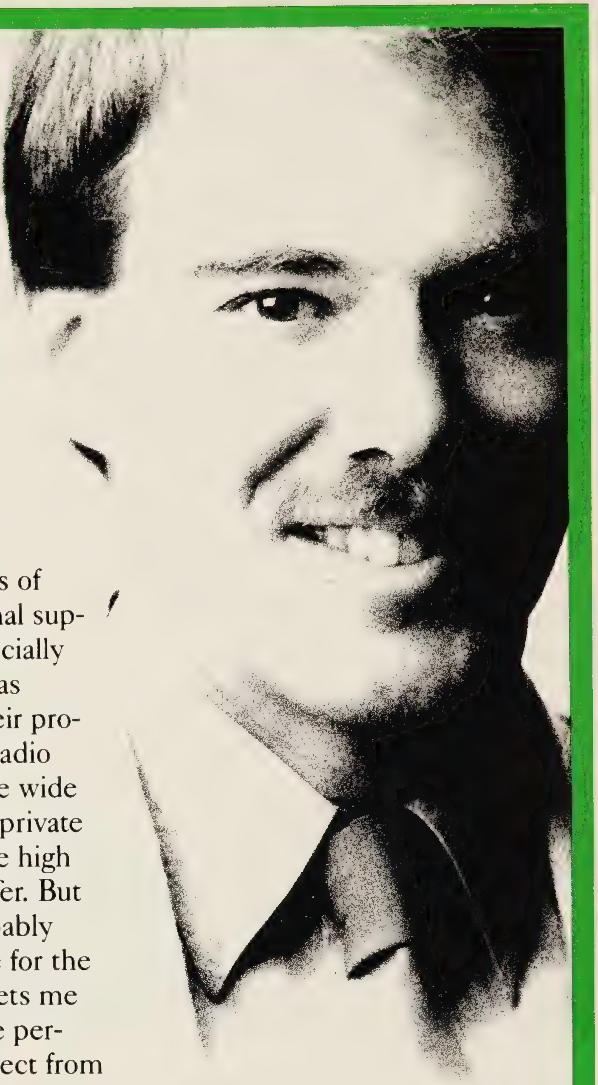


Calan SR
verapamil HCl
180mg
SUSTAINED-RELEASE
7-Caplet (One Week) Patient Starter Package

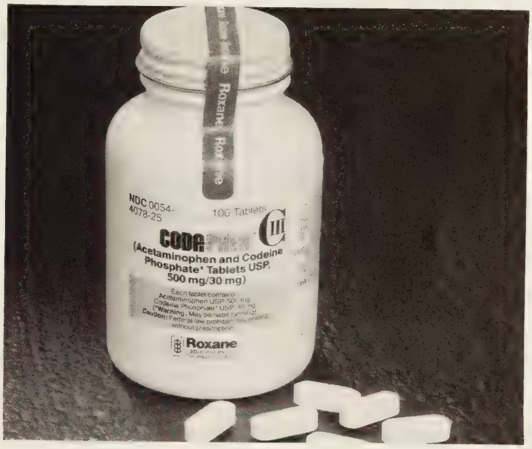
Searle unveiled its new 180mg Calan SR distribution plan called Patient Plus. Physicians enroll patients who can then receive up to three months worth of Calan SR 180mg free. Certificates for free Calan can be redeemed at any pharmacy.

LOTRIMIN AF
Formerly Sold Only By Prescription
Cures Athlete's Foot
Relieves Itching & Burning
Greaseless, Nonstaining

Schering-Plough has announced that clotrimazole 1%, the key ingredient in its popular Lotrimin product line, is now available to consumers without a prescription. Lotrimin AF is indicated for the self-treatment of common fungal infections and is available in a cream of liquid form.

NEW
MINOCIN
100 MG

Lederle Laboratories has announced an important therapeutic breakthrough with the introduction of a new pelletized form of Minocin, the tetracycline derivative widely prescription for treatment of acne and infections. Available in 100mg and 50mg capsules, Minocin pellets are not substitutable.


Roxane
CODAPHEN
(Acetaminophen and Codeine Phosphate Tablets USP, 500 mg/30 mg)
100 Tablets

Roxane Laboratories has announced the introduction of Codaphen (acetaminophen 500mg and codeine phosphate 30mg). Each Codaphen tablet has two-thirds more acetaminophen than other tablets of similar composition. Codaphen is available in bottles of 100 tablets.

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Continuing Education

Continuing Education Quiz

The Maryland Pharmacist **AUGUST 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by November 30, 1990. A continuing education certificate for one contact credit will be mailed to you within 30 days. Please type or print clearly.

Name ______________________________

Social Security Number ______________________________

Address ______________________________

City/State/Zip ______________________________

Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? ____________ minutes

Home Testing Products: Part II

1. All of the following statements are true EXCEPT:
    - a. freshly formed urine is normally sterile.
    - b. the most common urinary tract pathogen is E. coli.
    - c. most UTIs occur from movement of bacteria from the blood into the bladder.
    - d. normally, urine may contain a modest number of bacteria upon voiding.
2. When counseling consumers on the proper use of OTC home testing products, they should be told all of the following points EXCEPT:
    - a. be sure to follow directions and understand how to use the product.
    - b. if timing is important, use a stop watch or a watch that measures seconds.
    - c. make sure all utensils are clean and properly rinsed.
    - d. you can be sure of the results of the test because they are 100 percent accurate.
3. The urine sampling technique that involves collecting a sample midstream is best described as the:
    - a. basin-catch.
    - b. clean-catch.
    - c. random-catch.
    - d. sterile-catch.
4. The definition that is most synonymous with *diurnal* is:
    - a. "caused by a diuretic."
    - b. "collected over 24 hours."
    - c. "rhythmic variation."
    - d. "using two urinals."
5. The basis of the home diagnostic test for urinary tract infections is the detection of which of the following in urine?
    - a. Dead bacteria
    - b. Live bacteria
    - c. Nitrites
    - d. Sulfites
6. To maximize an accurate reading of a home pregnancy test, the woman should obtain a:
    - a. fasting urine sample.
    - b. first morning urine sample.
    - c. random urine sample.
    - d. twenty-four hour urine sample.
7. FDA is studying approval of home test kits for AIDS. This article presented three fundamental issues that have, at the time of its publication, delayed a decision. These issues involve all of the following EXCEPT:
    - a. sentiment against sending blood samples through the mail.
    - b. concern that those handling the sample would be infected by the HIV organism.
    - c. fear that if the result is positive, the individual may not receive proper counseling and follow-up treatment.
    - d. inability of the consumer to accurately perform the test.
8. In the article, the home testing product that may become available for detecting sexually transmitted diseases (besides AIDS) was for:
    - a. chlamydia.
    - b. gonorrhea.
    - c. syphilis.
    - d. trichomonas.
9. Relatively high doses of which of the following vitamins have reportedly caused a false-positive UTI test result?
    - a. Ascorbic acid
    - b. Folic acid
    - c. Pantothenic acid
    - d. Pyridoxine
10. Which of the following statements best describes a fasting urine specimen?
    - a. The first sample collected immediately after a meal
    - b. The second sample collected immediately after a meal
    - c. The first sample collected at least four hours after a meal
    - d. The second sample collected at least four hours after a meal

Classified

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"Rx" LICENSE PLATES are still available through the Association. When you receive your license renewal form, contact Mary Ann at the Association (727-0746) for details. The plates say "Maryland Pharmacists Association" in addition to "Rx" and the number. This offer is open to members and their families only.

THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Harold Katcoff at 358-7036.

FREE CLASSIFIEDS. MPhA members may place a classified ad at no cost in the journal. Send your typewritten ad to 650 West Lombard St., Baltimore, Maryland 21201.

EVERY SUNDAY MORNING at 6:30 a.m. on WCAO-AM and 8:00 a.m. on WXYZ-FM listen to Phil Weiner broadcast the pharmacy public relations program, "Your Best Neighbor," the oldest continuous public service show in Baltimore.

PHARMACIST WANTED Part-time, for one of area's best neighborhood pharmacies. Good hours and benefits PLUS bonus. Call Dr. Lance at (301) 426-6000. Recent graduates are encouraged to apply!

FOR RENT St. Thomas, U.S. Virgin Islands Condominium (weekly rental). Two bedrooms, two baths, overlooks the Caribbean on the beach. Ideal for two couples or family. Please contact: Dr. Steven J. Berlin, (301) 247-4770, evenings: (301) 252-7508.

PHARMACIST WANTED Full-time and part-time positions available at progressive independent pharmacy in rural setting. Full benefit package and competitive wages. Computerized. Closed Sundays. Will accept applications from recent graduates. Call Tom Connelly in Rising Sun at (301) 658-6444.

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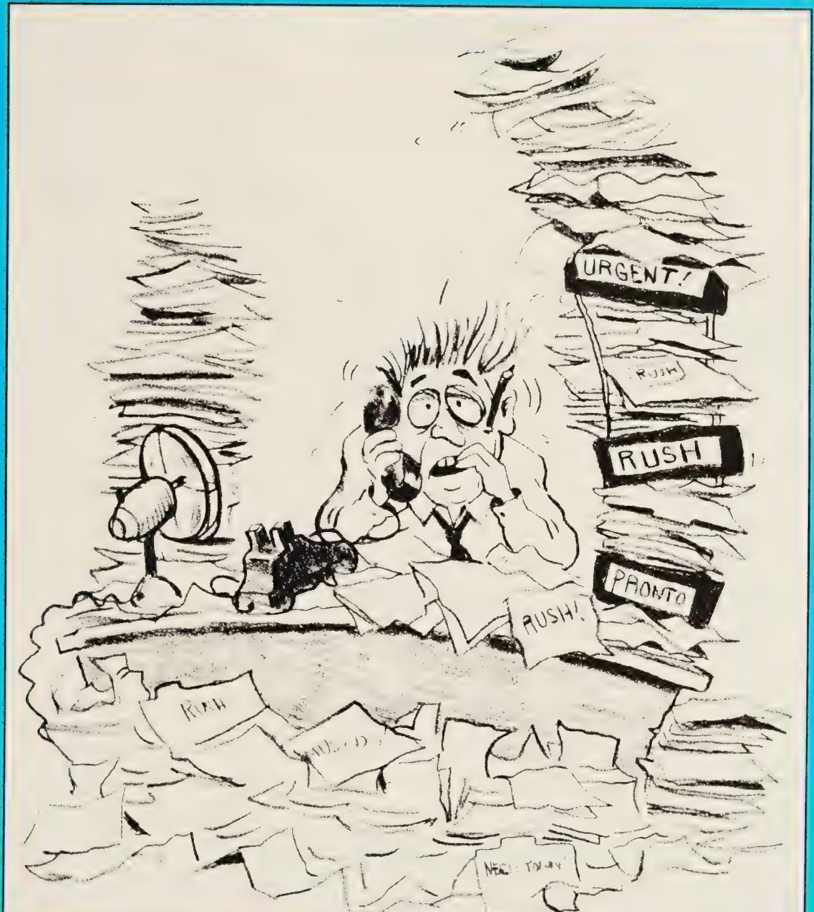
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Commentary

Have You Heard The Latest Pharmacy Gossip?

Pharmacists are the most trusted professional—this has been reported by a number of surveys and news articles. By inference, one could say that we are also nice guys. Well maybe it's time we stopped being so nice.

In a recent letter sent to pharmacy association executives, Senator David Pryor, author of Senate Bill S.2605 (the Pharmacy and Prudent Purchasing Act of 1990), has detailed a misinformation campaign spearheaded by PMA members. A number of pharmaceutical manufacturers have been telling our Senators and Congressmen that the PAPPA legislation is bad government, primarily because:

1. Pharmacists will be overpaid. They already make a killing off of prescriptions.
2. Pharmacists would have to take and keep medical and pharmacy histories and they don't have the skill or knowledge to do so.
3. The proposed demonstration project that would be the basis for future reimbursement to pharmacists for cognitive services is a waste of money. All pharmacists do is stick pills in bottles—there is no cognitive service involved in prescription dispensing.

Senator Pryor implores the profession not to be "nice guys" about these lies. He encourages us to ask our drug company representatives why their company and their trade association are actively promoting this negative image of pharmacy.

In the same token the controversy concerning the drug Clozaril manufactured by Sandoz has leaped out of the pharmacy press right into the pages of Forbes Magazine. Forbes commentary remarks that Clozaril is "a rich man's drug for a poor man's disease." Because this breakthrough drug is for schizophrenics, many of whom cannot sustain employment or family life, the majority of potential patients are medically indigent. In Europe the cost is as little as $30 per patient per week. In the United States the cost is $175 per patient per week. Because of this, Clozaril is available to fewer than one out of every ten candidates.

Is it not time to let everyone know how we feel? that Sandoz has unilaterally taken the pharmacist out of the health system with its Clozaril distribution system. It is time not to be so nice. It is time that we as a group of individuals start playing hard ball with the Goliaths of our industry.

Mark Levi, P.D.

MPhA President

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Correspondence Course

Counseling Consumers on OTC Aspirin Product Use Part I: Actions and Uses

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University of Cincinnati
Cincinnati, Ohio

and

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Ohio Northern University
Ada, Ohio

Goals

The goals of this lesson are to:

1. describe the pharmacology, toxicology, and therapeutic uses for aspirin and other salicylates; and
2. discuss specific patient information on methods to maximize efficacy and minimize the chance for adverse effects.

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This continuing education for Pharmacy article is provided through a grant from

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Objectives

At the conclusion of this lesson, pharmacists should be able to:

1. demonstrate an understanding of the pharmacologic and toxicologic mechanisms of action of aspirin and other salicylates;
2. identify specific therapeutic uses, indications, and restrictions for self-medication with salicylates;
3. select specific warnings and precautions associated with salicylate therapy; and
4. choose from a list, specific points for advising consumers on the correct use of these drugs.

Aspirin is one of the most widely used drugs in the U.S. Approximately 19 billion dosage units are taken annually.

Aspirin is also one of the most intensely studied drugs in the world. In view of the large number of studies, extensive use, and long marketing history of aspirin, it is relatively safe, with a low incidence of serious toxicity when taken as directed.

However, this does not imply that aspirin is free of adverse effects. Important ones include toxicity to organ systems (i.e., the GI tract, central nervous system, kidney, liver, and blood), and hypersensitivity reactions in susceptible individuals. Aspirin can also affect the fetus during pregnancy, is implicated in a number of drug interactions, and linked to some other serious reactions. A full review of the toxicity and drug interactions associated with aspirin will be presented in Part II of this series.

Pharmacology of Aspirin

Aspirin is absorbed by passive diffusion. Thus, non-dissociated (unionized) molecules pass through the membranes of cells lining the intestine. When gastric acidity is increased, the drug is less ionized and its rate of absorption is enhanced. A rise in pH increases its water solubility, but decreases absorption. However, it is difficult to prove that gastric pH changes have a significant therapeutic impact on aspirin in all persons.

After it is absorbed, aspirin is rapidly hydrolyzed by enzymes to its active moiety, salicylic acid. This primarily occurs within the liver, but also takes place within cells of the GI tract and erythrocytes. Some of the salicylic acid will be further metabolized. The remainder will be excreted unchanged in the urine.

Mechanism of Action. Aspirin and other salicylates (Table 1) alleviate pain mainly by a peripheral action which blocks impulse generation of pain fibers coming into the brain. The drugs do not appear to have the same type of central activity as do the narcotics.

There is also evidence that some pain relief provided by salicylates is due to decreased inflammation. This removes it as a source of stimulation of

Table 1
Safe and Effective Analgesic/ Antipyretic Salicylate Drug Products
Aspirin
Calcium Carbaspirin
Choline Salicylate
Magnesium Salicylate
Sodium Salicylate
Salicylamide

pain receptors. The fever reduction action is due to activity within the hypothalamus.

Despite its long history of use, the actual pharmacologic mechanism of action for aspirin has only recently come to light. The current theory is that salicylates interfere with prostaglandin synthesis.

Prostaglandins are produced in response to trauma and other noxious stimuli. As they relate to this topic, prostaglandins are involved in inflammation, smooth muscle contraction, and the febrile response. Drugs that reduce prostaglandin levels are therefore used to treat inflammation, pain, fever, and dysmenorrhea.

Figure 1 illustrates the suggested mechanism of action for salicylates. Of interest is the enzyme cyclo-oxygenase, which metabolizes arachidonic acid to its endoperoxide intermediate products. These are normally converted to thromboxanes, prostacyclins, and prostaglandins. Thromboxanes and prostacyclins both regulate platelet aggregation.

Endoperoxides also contribute to this action. Various products in the arachidonic acid metabolic pathway react with endogenous serotonin, bradykinin, and histamine to potentiate pain, redness, inflammation, and subcutaneous edema. The exact relationship between these biochemical influences remains unknown, but they are all implicated in the production of pain.

Prostaglandins induce pain partially by causing inflammation and partially by sensitizing nerve endings to the actions of bradykinin, histamine, and possibly other mediators of pain. Prostaglandin-induced pain is long-lasting and accompanied by skin tenderness and enhanced sensitivity to touch.

Salicylates lower elevated body temperature but will not reduce it lower than normal. Body temperature regulation is controlled to large extent by the hypothalamus. During fever, balance between heat reduction and loss continues to be regulated by the hypothalamus, but the body temperature is set at a higher than normal level. Antipyretics are believed to act by resetting the "thermostat" so that body temperature decreases toward normal. Heat production is not altered, but heat loss is increased by augmenting peripheral blood flow and sweating.

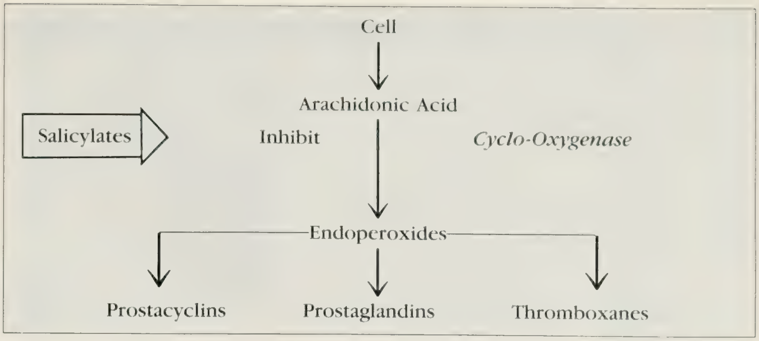


Figure 1. Suggested mechanism of action of salicylates

Product Formulations

Materials and methods used in manufacturing solid dosage forms (tablets, capsules, etc.) of many drugs, including salicylates, can affect onset of action, duration, and intensity of pharmacologic activity. Several processes govern the ultimate effectiveness of an ingredient from the time it is swallowed until its pharmacologic effects (relief of minor aches and pains, in this case) become evident. For example, the dissolution of solid dosage forms into granular aggregates in the fluids of the stomach or intestine is extremely important.

Another critical factor is the rate and extent of dissolution. This involves further transfer of drug from the fine solid particles of the tablet or capsule into a dispersion of molecules or ions in aqueous solution. The dissolution rate of a dosage form determines its overall rate of absorption into the systemic circulation and, consequently, distribution to the desired site of action.

The finished solid dosage form directly affects the dissolution rate with subsequent bioavailability of the product's ingredients. Though there is a correlation between differing aspirin product formulations and drug levels achieved in the blood, the relationship of blood levels to the degree and onset of pharmacologic activity (e.g., pain relief) is not understood. Needless to say, a minimal (threshold) level of drug in the blood is required to produce analgesia. However, for most analgesics, because of the insensitivity of current methodology in measuring pain relief, relating analgesia to blood levels cannot be quantified.

OTC salicylate products are available in several solid dosage forms including tablets, capsules and suppositories. The most common are tablets, i.e., buffered, unbuffered, chewable, enteric-coated, microencapsulated, and time-release. Different formulations significantly affect their bioavailability.

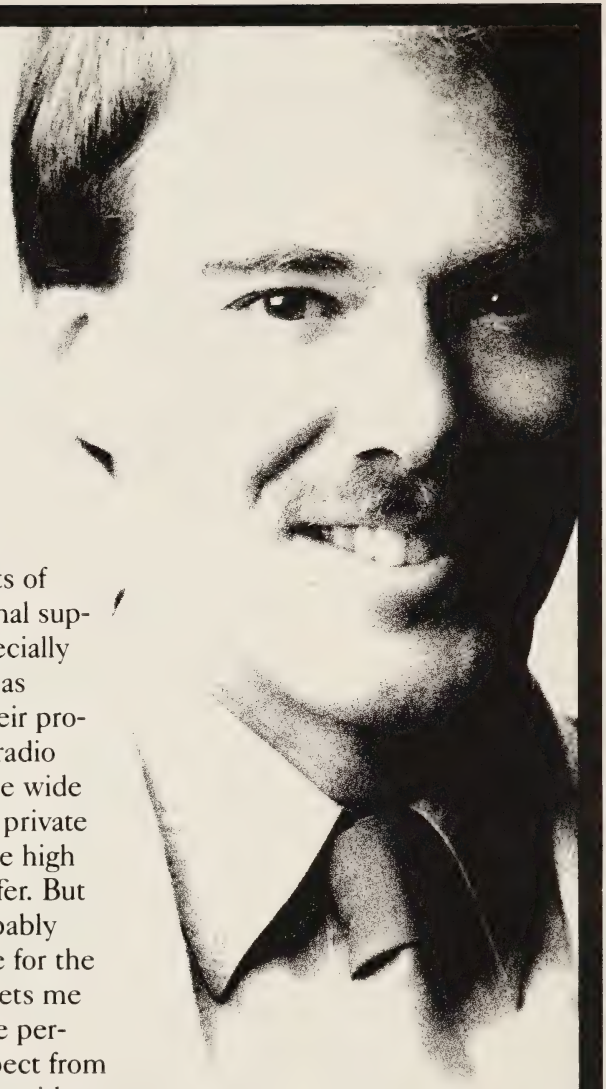
The original, and still most popular dosage form of aspirin, is the unbuffered, regular tablet. It could be assumed that all products containing unbuffered aspirin are comparable with respect to bioavailability (i.e., amount of drug absorbed into the blood in a given period). Unfortunately, this has not been demonstrated in studies where dissolution rates of commercial unbuffered products have been compared. This appears to result from the difference in active ingredients and excipients that various products contain.

Buffered aspirin is the other major OTC tablet dosage form. The purpose of buffering is to increase dissolution to hasten onset of activity and reduce gastric irritation. Buffered aspirin preparations are claimed to reduce gastric distress.

The degree of buffering in most products is insufficient to markedly affect the pH of gastric fluids. It only increases the pH in the area immediately around the dissolving particles. This results in more rapid dissolution and removal from the stomach, and decreased local gastric irritation.

Chewable tablets and gum are convenient for individuals who have difficulty swallowing whole tablets. They are especially popular with children.

Chewable tablets are usually pleasantly flavored and contain 81 mg of aspirin. Chewing gum (i.e., Aspergum)



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contains 226.5 mg per piece.

Because of the presence of aspirin in the oral mucosa for prolonged periods, chewable tablets and gums should not be used for at least 7 days after tonsillectomy or oral surgery, except when a physician has advised otherwise. Such use may increase the chance of local hemorrhage.

Enteric coated tablets (e.g., Ecotrin) were developed to eliminate local irritation in the stomach. These tablets dissolve in the small intestine rather than the acidic gastric fluids. They require a longer time to deliver medication to the systemic circulation because of their delay in absorption. Therefore, when using such dosage forms, the individual must take this delay into consideration. The use of enteric coated preparations for treating acute symptoms, such as occasional headache, is not as desirable. For treatment of chronic symptoms such as arthritis, these products may be more useful once an adequate blood level is established.

A suppository dosage form is convenient for individuals who are vomiting, unconscious, or experiencing excessive gastric irritation. However, it may take twice the dose rectally to produce the same effect as if taken orally.

Time-release dosage forms (e.g., Measurin, Arthritis Bayer) increase the drug's duration of action. Some authorities question whether these dosage forms are worth the additional cost.

For example, individuals requiring anti-rheumatic doses of aspirin to treat symptoms of arthritis may be ill-advised to use long acting preparations. With larger doses of aspirin, metabolism may proceed independently of blood levels, so prolonged action can be achieved by chronic dosing with regular tablets. Taking aspirin in a time-release formulation may increase medication cost while providing no additional therapeutic benefits.

Salicylate Derivatives

When the FDA/OTC Advisory Panel on Internal Analgesics and Antipyretics reviewed commercially available salicylates, it rated the following items as safe and effective (Category I) for self-medication.

Calcium carbaspirin is a complex of calcium salicylate and urea. It is a larger molecule than aspirin, so a higher dose (414 mg) is required to produce the same pharmacologic effect as 325 mg of aspirin. Although the dissolution rate for calcium carbaspirin is faster than aspirin, the rate of absorption into the blood is similar. It has no proven clinically significant therapeutic advantage over aspirin in most individuals.

Choline salicylate (Arthropan) is a highly soluble form of salicylate that can be administered as a stable, palatable liquid. The advantage of this formulation is that it is the only liquid salicylate preparation currently available OTC. Claims are made that it is absorbed five times faster than aspirin. On the other hand, while choline salicylate may be more palatable than an equivalent dose of aspirin, and more rapidly absorbed than aspirin, the analgesic effectiveness of the two drugs has yet to be adequately compared. In spite of claimed advantages, choline salicylate has not become a popular item.

Magnesium Salicylate. While the number of well-controlled studies on effectiveness of magnesium salicylate are relatively few and mostly unpublished, they nonetheless indicate that it is comparable to aspirin. The claim that magnesium salicylate might be indicated when aspirin cannot be tolerated remains unproven.

There is evidence that magnesium salicylate is as safe as aspirin, although it has similar side effects. Magnesium salicylate is not associated with causing asthmatic attacks in aspirin-sensitive persons. Additionally, it, as well as other non-acetylated salicylates, does not affect platelet aggregation. Large doses can cause a hypoprothrombinemic action, however. There is also evidence of gastric mucosal bleeding and irritation similar to that caused by aspirin.

Toxicity to magnesium salicylate is unlikely when taken in recommended dosages of 325 to 650 mg every four hours (not to exceed 3900 mg in 24 hours), unless renal insufficiency is present. The magnesium contained in the product is rapidly excreted in most persons. Hypermagnesemia is therefore difficult to achieve by the oral route, when renal function is normal. However, when renal dysfunction is present, magnesium toxicity can occur. Therefore, a warning on the labeling of OTC products containing magnesium is required. For magnesium salicylate, as well as other OTC products (e.g., antacids, laxatives), labeling must contain the following warning: "Do not take this product if you have kidney disease, except under the advice and supervision of a physician."

To place this in proper perspective when counseling consumers, magnesium salicylate is not contraindicated in all persons with kidney disease — just those who cannot adequately excrete magnesium ions. The thrust behind the label warning is that individuals should check with a physician before choosing to take the drug.

Magnesium salicylate-containing products are sold both OTC and by prescription (Table 2). The major reason is linked to promotion of the products by the manufacturers. In the U.S., a manufacturer may sell an analgesic product containing a salicylate (or ibuprofen) in certain dosage strengths for the "temporary relief of mild pain." If the manufacturer chooses to promote the product for treating rheumatoid arthritis, which is neither self-diagnosable nor self-treatable, it

Table 2

Commercially Available Products that Contain Magnesium Salicylate

Product	Manufacturer	Dosage Strength
OTC		
Doan's Pills	Jeffrey Martin	325 mg tab
Efficin	Adria	500 mg tab
Prescription		
Durasal	Seatrace	480 mg tab
Magan	Adria	545 mg tab
Mobidin	Ascher	600 mg tab
MS-650	Williams	650 mg tab

Table 3

Differences in Label Indications for OTC and Rx-only Magnesium Salicylate Products

OTC	For the temporary relief of headache, occasional minor aches and pains including muscular backache pain.
Prescription	For the relief of the signs and symptoms of rheumatoid arthritis, osteoarthritis, bursitis and other musculoskeletal disorders.

can only be sold by prescription. The difference in these indications (for magnesium salicylate) are shown in Table 3.

Sodium salicylate had been used for a quarter century before aspirin was introduced into medicine in 1899. Ironically, when aspirin was introduced, it was touted as more palatable and producing less gastrointestinal disturbance than sodium salicylate. While it has been demonstrated that aspirin hydrolyzes to salicylic acid, and it is suggested that the latter is actually the active chemical, the analgesic effect of aspirin is now recognized as being superior to an equimolar dose of sodium salicylate. Sodium salicylate is as safe as aspirin. Unlike aspirin, it has not been associated with reactions causing asthmatic attacks. Additionally, sodium salicylate does not affect platelet aggregation. Like other salicylates in large doses, it does have a hypoprothrombinemic effect.

While there is concern relating to the quantity of sodium in drug products and its role in development or worsening of hypertension, most studies have shown that in the absence of endocrine or kidney disturbances, the effect of sodium on blood pressure can be moderate. This is rarely clinically significant. Persons with heart failure or renal disease, who have a high sodium intake, may develop edema, leading to a significant rise in blood pressure.

The recommended maximum daily dosage of sodium salicylate is 4 gm. This quantity contains 25 mEq of sodium, which is sufficiently high to warrant a warning on the labeling of such products, which states: "Do not take this product if you are on a sodium-restricted diet, except under the advice and supervision of a physician." It would therefore be prudent for individuals who are on such a diet to use a different form of salicylate.

Salicylamide is used primarily in OTC analgesic combination products and cold preparations. The amount per dosage unit ranges from 97 to 400 mg. Salicylamide is not a true salicylate derivative. Instead, it is the amide congener of salicylic acid. It does not possess the chemical properties of salicylates and is not hydrolyzed to salicylic acid.

The FDA/OTC advisory panel that reviewed salicylamide concluded that salicylamide must be studied further to prove its safety and effectiveness. FDA has since notified manufacturers of salicylamide-containing products that there is adequate evidence to prove that salicylamide is not an effective OTC analgesic.

Consumer Advice

Since aspirin can upset the stomach in some individuals, it has been recommended that each dose be taken with a full glass of water. However, there is a lack of controlled studies to support the contention that the quantity of water has any effect relative to safety or efficacy. On the other hand, water could be effective in facilitating dissolution. This would reduce localized stomach mucosal irritation from aspirin particles. For individuals who are susceptible to gastric irritation, the advice might be sound. However, the greatest amount of gastric ulceration due to aspirin and other NSAIDs is due to their systemic effect on prostaglandins rather than local activity.

Persons who might experience problems in taking aspirin include: asthmatics, diabetics, those with gout or peptic ulcer disease, and patients taking anticoagulants or methotrexate. These individuals should check with their physician before self- medicating with aspirin. While it is not contraindicated and most of these patients are not significantly affected by aspirin, it is still best to check with their physician in case they might experience difficulties.

Very few people are allergic to aspirin. However, asthmatics are much more likely to experience hypersensitivity reactions when taking aspirin. Also, there is cross-sensitivity with other NSAIDs.

For diabetics, salicylates can exert a significant effect on carbohydrate metabolism and cause hypoglycemia. An occasional dose does not appear to cause problems, but moderate to high doses could interfere with diabetic control. In patients taking the older sulfonylurea derivatives, salicylates may displace them from their plasma protein binding sites and/or interfere with their excretion. The newer sulfonylureas (DiaBeta, Glucotrol, Micronase) do not appear to significantly bind with serum protein and are not linked to this interaction.

For patients with peptic ulcer disease, the GI irritation and increased bleeding seen with salicylates could cause problems, possibly major.

Aspirin may aggravate gout in patients who are taking probenecid (Benemid) or sulfinpyrazone (Anturane). Salicylates can antagonize the capability of probenecid and sulfinpyrazone to increase excretion of uric acid, and thus inhibit their effects.

Aspirin (in high doses — 3 or more gm daily), but not the non-acetylated salicylates, has been shown to potentiate oral anticoagulants by several mechanisms, including an additive inhibition of the formation of prothrombin. Aspirin, in any dose, can interfere with blood clot formation and also cause GI tract irritation and bleeding.

Salicylates displace methotrexate from its plasma protein binding sites and may block its excretion. This can raise blood levels and increase the chance of toxicity of an already highly toxic drug.

In each of the above cases, neither acetaminophen nor ibuprofen has demonstrated the same problems or interactions. They may be better alternatives to aspirin for relieving pain or fever in patients taking methotrexate.

This discussion of aspirin and other salicylates is continued in Part II of this series. In that lesson, adverse effects and toxicity are presented.

Dickinson's Pharmacy

by Jim Dickinson

Selling out to the chains. Do chains keep gobbling up independents? If they do, whose fault is it? This summer, I got a first-hand lesson on this when my local newspaper's business section splashed a four-color spread—"McVicker's Closing; In Business 98 Years."

There, under the familiar orange-and-blue Rexall sign with nine empty bulb sockets was McVicker's owner, Irving Rider, 63, holding a package of Lydia L. Pinkham Vegetable Compound in his right hand, and Swamp Root in his left.

It was a nostalgic, well-written piece about the demise of a fine old business on High Street, Morgantown, WV, that had dispensed over 3 million prescriptions from a hand-carved, leaded-glass 19th century prescription counter imported from Austria.

The story related, as probably countless other small-town newspaper reports of pharmacy closings had related before, the founder's colorful start, and all the pharmacists who had learned their dispensing arts there while graduating from the pharmacy school at West Virginia University a few blocks up the hill.

It told of generations of patients who had been helped, like the man who tried to get something sounding like Ballsmer that a friend that a friend had recommended for a backache. Rider, since 1978 the practice's fourth owner, decided "Ballsmer" was Hanford's Balsam of Myrrh, which "isn't a fast-mover, so the chains probably don't carry it." And so it went—a lay reporter's sympathetic outside-looking-in view of a rich heritage, a piece of Americana, that's disappearing.

I was saddened and alarmed. So I called McVicker's Rexall Drugs to see if something couldn't be done to save this fine old pharmacy. Maybe we could find a young entrepreneurial pharmacist and make a demonstration project of our rescue.

The phone was answered by a bright female voice: "McVickers-Rite Aid." I found myself talking to Cindy Van Dyke, Rite-Aid's relief pharmacist at the store four doors up the street from McVicker's.

"Everyone takes up the independents' case," she exclaimed. "Why don't you ever get the chain's side of it?" Cindy objected to the way Rider had "bad-mouthed" chains when he had sold out to one.

Actually, apart from the side remark about chains probably not stocking Hanford's Balsam of Myrrh, the article I read had not bad-mouthed chains at all. Admittedly, it quoted Rider in the following terms: "One of the major differences between old-time pharmacists and the new breed, he contends, 'is that we take care of our patients . . . er, customers. Most of the new ones don't even know their customers' names. They're just so many moving bodies to them.' "

Cindy was upset about the inference. She supposed Rider had sold out to the highest bidder, which was Rite Aid—but the chain would not be occupying the 98-year-old pharmacy, just taking all of its drug stock and customers four doors up the street.

"Everything depends on the person behind the counter," she protested. "The independent can be the impersonal one."

I knew that was true. As we talked, Cindy turned out to be ten years into her career and very high on pharmacy, working in two Rite Aid stores, and doing a lot of counseling (she interrupted our conversation several times to counsel patients on their prescriptions).

"Irving taught me everything I know," she said generously. That probably explained her hurt feelings about the newspaper report. She had been one of the dozens of WVU pharmacists who had interned at McVicker's.

So if Cindy loved pharmacy enough to sound off like that, what did Irving Rider have to say? Well, he had not instructed the newspaper reporter what to write; he did feel that chains don't have the time to maintain such close relationships with patients as he was relinquishing.

Yes, he did admire Cindy Van Dyke, but he had no reason to know what kind of pharmacy she was doing now. Then came the confession—but only after a lot of prodding. No, he had not tried to find another independent to come in and buy McVicker's—the "word" had been out for some time, and nobody was interested in buying the business. But, Rider admitted, he had not advertised it.

The decision to close had been "painful," he said—brought about by the deaths of four of his closest friends and by the realization that it was past time for him to ease up. While he loved pharmacy per se, he loved his regulars even more and it was losing them that hurt the most.

Continued on page 10. . . .

It was still a good business, doing about 150 prescriptions a day, with himself and Martha Hickman alternating as the duty pharmacist for 35 years. She took his decision to close the store as her cue to retire from active pharmacy practice.

Now the important part of McVicker's—its prescription drug stock and its customers—had gone to Rite Aid. The 19th century Austrian prescription counter had been bought by a new bank that was moving into a building behind McVicker's, fronting on Spruce Street. Rider didn't know what they wanted to do with it—he guessed they were setting up a front-lobby display of some kind.

A couple of out-of-town antique dealers had bid on all the other old fittings and pharmacy specimen jars, and would be picking them up next week if somebody didn't outbid them.

As we talked, I realized that much as I could regret the emptying hole in the old High Street building that had been McVicker's, nothing would change the course of events that was robbing Morgantown of its oldest pharmacy.

Cindy and her managing pharmacist at Rite Aid, Jackie Tonkovich, regretted that aspect of the event, too. Jackie saw a silver lining—she really enjoyed dealing with McVicker's patients. "I've ordered tons of the old-time remedies since they transferred over here," she said. As she spoke, Jackie was opening newly arrived cartons of Hanford's, Willard's and Varacolate.

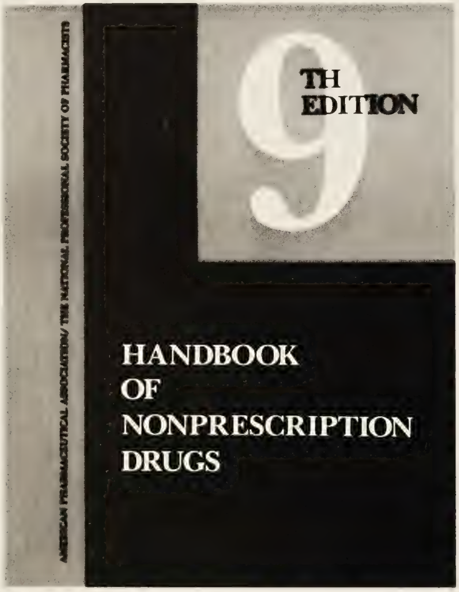
And as she spoke, my mind saw two faces of the love of pharmacy. One face was worn by the old independent, tired at the end of a lifetime in the profession and sadly shaking loose in a world that may be better fitted to a different kind of love. The other face belonged to enthusiastic young pharmacists, who are increasingly female and who don't need to own the business to make of it whatever they can.

They may not realize it yet, but to them also belongs something else—the challenge of showing that in the new world of pharmacy, caring is not something that's tied to owning a piece of the action.

Jackie and Cindy both make home deliveries (without being paid for it), and they have the freedom to set such policies as mailing out or sending out by cab prescriptions against payments yet to be made—and physically collecting from the occasional "deadbeat."

Inheritors of an ancient art, they're putting a new face on chain pharmacy. Once cold-shouldered at local pharmacy meetings, Cindy says her chain colleagues now fraternize easily at the monthly tri-county meetings that regularly draw up to 50 attendees.

This feature is presented on a grant from "Dickinson's Pharmacy—The Independent Voice," an 8-page practical monthly newsletter available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45.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References

1. *USP DI Update, September/October 1988, p 120*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774*

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In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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Closed Distribution of Clozapine Continues Despite Protests from Pharmacy

C. Edwin Webb, Pharm.D. M.P.H.
APhA Director of Professional Affairs and Policy

Despite months of criticism from the American Pharmaceutical Association (APhA), other pharmacy groups and the mental health and medical communities, Sandoz Pharmaceuticals continues to champion its restricted distribution system for clozapine (Clozaril). In implementing the so-called "Clozaril Patient Management System" (CPMS), Sandoz and its business partner in the venture—Baxter Healthcare's Caremark Homecare Division—have effectively removed from pharmacist and physician control the responsibilities for treatment, dispensing and monitoring of an important new therapeutic agent. In response, APhA has vowed to explore all appropriate avenues available to dismantle Sandoz/Caremark's closed distribution of the drug.

APhA opposes limited distribution of pharmaceutical products since such plans prevent the involvement of pharmacists in patient care. APhA's position is clear and unequivocal—Sandoz and Caremark have created an artificial system of drug prescribing, distribution, and monitoring that supplants the societally sanctioned roles of patients' personal pharmacists and physicians by using corporate case managers and phlebotomists.

Background on Clozapine

Clozapine, the first of a new class of antipsychotic drugs known as dibenzodiazepines, is indicated for the treatment of schizophrenia in patients who fail to respond to standard antipsychotic drug therapy. The drug has demonstrated substantial benefit in many patients and represents a very important breakthrough in the treatment of severely schizophrenic patients.

Sandoz insists that clozapine should have a limited distribution system because the drug is associated with a 1[–]2% incidence of agranulocytosis, a potentially fatal blood disorder. The problem was identified in clinical trials with the drug in the early 1970's, resulting in increased monitoring. Relatively few deaths have occurred due to the drug since 1977, according to the manufacturer. With proper monitoring and discontinuation of therapy when marrow suppression becomes significant, the problem is generally reversible.

Clozapine was approved by the Food and Drug Administration in September 1989. In seeking FDA approval, Sandoz proposed a restricted distribution system for clozapine to monitor for this specific adverse effect. The system, known by the service-marked title of CPMS, is an exclusive contractual arrangement between Sandoz Pharmaceuticals, the Caremark Home Health Care Division of Baxter Healthcare, and Roche Biomedical Laboratories. Essentially, the system provides for the distribution of weekly supplies of clozapine *only* in conjunction with a weekly blood sample collection and determination of the white blood cell count. Caremark is the sole source of supply for the medication, both for ambulatory patients, and for hospitals seeking to obtain the medication for use in inpatients. Charges for clozapine are bundled with charges for the home care, phlebotomy and laboratory monitoring services, and have been set at $172.00 per week, regardless of dose, which may range from 100–900 mg per day.

While CPMS was not a condition of the FDA for drug approval, reference to it is contained in the official product labeling for clozapine under the "How Supplied" section. National pharmacy organizations became fully aware of the proposed system at approximately the time of approval of the drug's labeling, and began activities, both individually and collectively to address the problem. Clozapine became commercially available in the U.S., through CPMS, on February 5, 1990.

APhA Action

In a now famous February 7, 1990 letter to Sandoz Chief Executive Officer and President Jacques Rejeange, APhA Executive Vice President John A. Gans strongly criticized the company for its CPMS plan, outlining in detail many specific points which demonstrated the lack of clinical and scientific data to support such a system. He also pledged to continue efforts to open the distribution system for the drug.

"We can only conclude, in light of the substantial body of evidence refuting the need and desirability of [the CPMS plan] that the rationale for CPMS is based on the economic advantages inherent in the system for Sandoz and its exclusive partner Caremark," wrote Gans.

"In our view such corporate irresponsibility has no place in America's health care system. We will therefore explore all appropriate avenues available to us to seek the dismantling of CPMS, and any future systems similar to it, that ill serve the nation's patients, health care professionals, and the public."

APhA's position is that the CPMS plan is clinically, scientifically, and economically unjustifiable because:

- The system interferes with established pharmacist-patient-physician relationships.
- The incidence of clozapine-induced agranulocytosis is insufficiently different from many other medications that cause the same or similar problems to warrant such a restrictive distribution system.
- Other drug manufacturers that produce drugs with equally or more severe adverse effects have worked with pharmacists and physicians to ensure patient safety, rather than bypassing them.
- The FDA did not require a restricted distribution program when the agency approved clozapine.
- The CPMS plan needlessly increases the cost of clozapine therapy. APhA asserts that Clozaril's closed distribution plan is a "monopolistic mechanism" to gain economic advantages for Sandoz and Caremark, and blames the high cost of clozapine therapy—$9,000 per patient per year—on the product's elaborate and unnecessarily restrictive distribution and monitoring program.

APhA and other pharmacy associations have met with Sandoz executives on several occasions to discuss the CPMS plan. However, despite criticism from APhA and other pharmacy groups such as the American Society of Hospital Pharmacists (ASHP), the Joint Commission of Pharmacy Practitioners (JCPP), and NARD, Sandoz began distribution of clozapine through its CPMS plan on February 5.

'Inadequate Justification'

In his letter to Sandoz, Gans noted that pharmacists and physicians have ably demonstrated their competence in managing the potential occurrence of agranulocytosis with other products. Gans questioned why Sandoz believes that "they are incapable of performing these functions with regard to Clozaril?"

After reviewing the product information and discussing the drug with researchers involved in the clinical trials of clozapine, APhA has concluded that the occurrence rates of drug-induced agranulocytosis after four-to-six months of clozapine therapy fall to levels indistinguishable from other drugs that have been associated with the problem.

"Thus," wrote Gans, "there appears to be inadequate clinical justification for weekly analysis of white blood cell counts indefinitely for patients maintained chronically on the medication."

Researchers also conclude that there have been very few deaths as a result of clozapine-induced agranulocytosis since 1977 when the knowledge of the potential problem became widely known among researchers.

"We seriously doubt that the equivalent of CPMS has been in place since 1977 in those countries where the drug has been approved for use, or in the clinical trials programs in the United States where the drug has been under study," said Gans. "We submit that it has been the effective practices of pharmacists and physicians in monitoring their patients for drug-induced problems that has contributed to this improved safety profile of the drug over the past 13 years of clinical research and use."

More Risk with Other Drugs

APhA also has pointed out that other pharmaceuticals with significant adverse effects do not require a closed distribution system. APhA emphasizes that the safety of these drugs was ensured through the tradi-

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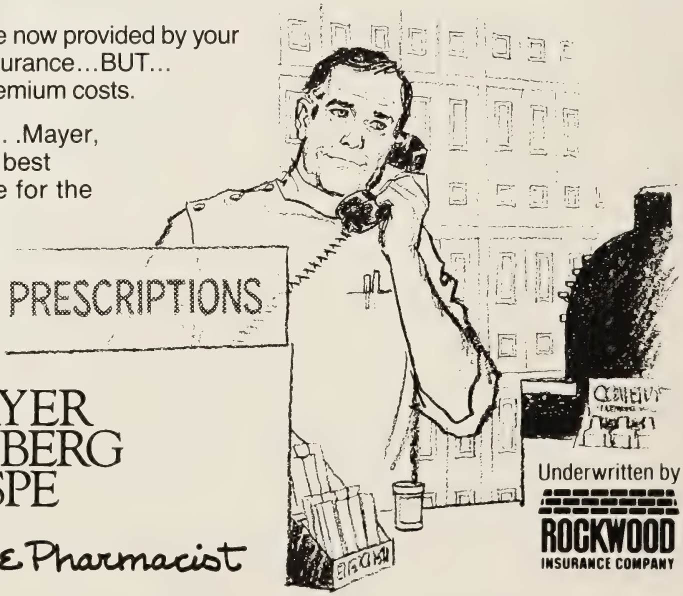

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tional drug therapy management functions of pharmacists and physicians, as well as effective communication by the drugs' manufacturers.

"An excellent example of such educational efforts to improve prescribing, dispensing, and monitoring practices is represented by the improved use of chloramphenicol," said Gans. "Through effective education of health care professionals, Parke-Davis was able to assure improved use of its important therapeutic agent by working with the professionals best able to manage its use. Parke-Davis obviously saw no need to usurp health care professionals patient care roles through a contrived distribution system."

A more recent example involves the efforts of Roche Laboratories, the FDA, and health professional organizations to improve the quality of prescribing, dispensing, and monitoring of isotretinoin, which was found to cause fetal abnormalities in women who take the drug during pregnancy.

Excessive Cost

APhA also asserts that CPMS's $9,000 per patient per year cost is excessive. "At a time when cost-effective health care clearly is a priority need in the United States, CPMS stands out as a particularly inappropriate scheme," said Gans.

APhA's substantial list of concerns have been expressed not only in it's initial letters to Sandoz, but subsequently in direct meetings between Sandoz officials and APhA staff and Board members at the APhA Annual Meeting in March and at Sandoz corporate headquarters in New Jersey in late April. Despite the frank dialogue, solutions to the controversy have not yet been identified.

FDA's Stance

APhA emphasizes that FDA did not require the specific restrictive distribution of clozapine as a condition for approval of the drug.

However, Gans points out that while this fact has been established, "we continue to hear of discussions between Sandoz representatives and various pharmacy, state health, state mental health and other professional groups in which CPMS has been justified on the basis of FDA requirements. We strenuously object to such misrepresentations."

In a March 14 letter to APhA, FDA's Center for Drug Evaluation and Research Director Dr. Carl Peck, stated that while frequent monitoring is central to the safe use of the drug, the exclusive distribution through Caremark was not required for approval. FDA said clozapine can be distributed through any pharmacy system which Sandoz chooses to recognize, which assures that the dispensing of the medication is tied to monitoring a patient's weekly white blood cell count.

The FDA's letter followed a March 5 meeting between staff of APhA and FDA to discuss the CPMS concept and its inclusion in the product's official labeling. At that meeting APhA requested a letter clarifying the agency's position.

Dr. Peck further wrote that while the agency "deems frequent monitoring [of white blood cells] critical to the safe use of clozapine," FDA does not see the need that "any particular entity carry out any of the contemplated tasks, so long as the crucial elements of the scheme are assured."

"Although Sandoz may have chosen a specific vendor [to distribute clozapine], FDA considers it compatible with the current labeling for Sandoz to agree to provide clozapine through any other entities, public or private, that have made specific arrangements to assure that each patient receives weekly white blood cell monitoring as a precondition for dispensing the drug to that patient," Peck said.

This action by the FDA has resulted in increasing support for APhA's position on the part of organized medicine. On June 1, APhA along with AMA and other national health associations met with FDA acting-Commissioner James Benson, where the issues of misuse of FDA labeling provisions and lack of authority to regulate the practices of pharmacy and medicine were discussed. Dr. Benson instructed FDA staff to meet specifically with APhA and AMA representatives to discuss the issue in more detail.

National Discussion Group

In order to focus additional attention on the substantial public health issues raised by CPMS, APhA convened a group of national health care and related organizations on May 15 to engage in a "National Discussion Group on Clozaril." The group met at APhA headquarters to share information and to provide all participating organizations the opportunity to begin to identify potential legal and legislative strategies to dismantle CPMS.

Those participating in the national discussion group include:

- American Pharmaceutical Association, convenor
- American Medical Association
- American Mental Health Association
- American Psychiatic Association
- American Public Welfare Association
- American Society of Hospital Pharmacists
- Blue Cross & Blue Shield Association
- Group Health Association of America
- Kaiser Foundation of America
- National Association of Attorneys General
- National Association of State Mental Health Program Directors
- Department of Veterans Affairs (observer)
- General Accounting Office (observer)
- Senate Veterans Affairs Committee (observer)
- Office of Technology Assessment (observer)

Further meetings of the group are anticipated. It was also at about this time that APhA learned of the activities of at least six state attorneys general in seeking preliminary information from Sandoz regarding potential anti-trust violations presented by the CPMS scheme. APhA continues to follow the activities of state attorneys general on the clozapine/CPMS issue with marked interest.

What Does the Future Hold?

APhA remains committed to dismantling CPMS, and to making clozapine more generally available to patients who need it through their own system of pharmacists and physicians. APhA has urged Sandoz to identify the criteria it deems necessary for proper use of clozapine, in order to allow pharmacists and physicians to make their own determination as to their ability to provide this medication and associated monitoring services to patients. APhA will continue to work with other pharmacy and medical organizations, mental health groups, and government and regulatory agencies to achieve this end.

What can you do? Discuss the issue with your local mental health and physician colleagues. Form your own local discussion group to bring the issue into the open at your local and state level. Of critical importance, you can inform APhA and your state association about any personal experiences you have had regarding CPMS which demonstrate its failure to serve patients' best interests.

You can also share your concerns, by letter or telephone, with some of the federal legislative and regulatory groups who have jurisdiction over such health issues. Key ones are listed below for your use.

Perhaps most importantly, you can think long and hard about the impact of this type of artificial regulation of your professional practice. Think about the things we all must do as health professionals to assure that our practices serve patients' needs—and serve them so clearly and well that no entity, whether corporate or government, ever contemplates circumventing us, for any reason!!

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Antipsychotic Use in the Management of Dementia Patients with Behavioral and Mental Problems

Samuel E. Elbers

The problem of managing the behavioral and mental problems of dementia patients is becoming increasingly important in the field of health care. Dementia has been estimated to be occurring at a rate of 5 percent in the elderly population over 65,[7] and the overall number of people over 65 continues to rise. Clearly there will be an increased need for health care of these patients in the future.

Dementia patients often develop behavioral disturbance such as agitation, aggression, which can be of a physical or sexual nature, assaultiveness, and combativeness. Psychotic symptoms or hallucinations of both an auditory or visual nature, paranoia and delusions also frequently occur. These problems are extremely difficult for care givers and health care providers to manage and, if consistent, often result in institutionalization. Although as yet no clear cut treatment strategy has been developed to deal with these problems, treatments are in use, the most common being antipsychotic drugs.

Antipsychotics have been shown to be of some benefit as a treatment modality;[1,6] but the high frequency and severity of associated adverse effects may outweigh them in many cases. Two of the most recent and best controlled studies were conducted by Petrie, et al.,[6] and Barnes, et al.,[4] respectively. Both studies were done on dementia patients who have behavior and/or mental problems of at least three of the following types: agitation, anxiety, delusions, depressed mood, hallucinations, hostility, irritability or sleep disturbance. In the Petrie study, 64 patients with dementia were treated with either haloperidol, loxapine or a placebo. Efficacy of drug over placebo was shown to be significant, but only 35 percent of the patients receiving haloperidol and 32 percent of the patients receiving loxapine were observed to show moderate or marked global improvement. Patients on placebo improved at a 9 percent rate. Barnes studied the effect of thioridazine, loxapine and placebo in 53 patients diagnosed with dementia. It was found again that only about one third of patients were observed to show moderate or marked global improvement. Barnes also found that in the behaviors of suspiciousness and hostility, placebo worked as well as an active drug. The drugs in the study were shown to work best on the patients with the most severe manifestations of behavioral and mental problems. Also, non-aggressive, repetitive or bothersome behaviors showed no improvement. In both studies a high incidence of adverse effects were observed with sedation and extrapyramidal symptoms predominating.

The side effects produced by the antipsychotic drugs are many and can be serious and permanent. Among them to be discussed are extrapyramidal syndromes, orthostatic hypotension, anticholinergic effects, sedation and cardiac toxicity. Extrapyramidal side effects can arise during antipsychotic therapy due to the ability of the drugs to block various neurotransmitters in the extrapyramidal system, which is responsible for the control of voluntary movements.[2,8] As a result a variety of movement disorders can manifest while on antipsychotic therapy including akathisia drug-induced parkinsonism and tardive dyskinesia. Akathisia is one of the most common movement disorders occurring in about 20 percent of patients.[2] Akathisia is characterized by constant purposeless movements and restlessness and is generally dose dependent.[3] The condition can usually be improved by lowering the dose. The restlessness observed in patients with akathisia has the potential to be misinterpreted as a worsening of behavioral problems.[2] This

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Editor's Note: This article is the second of several columns featuring student research projects for the UMAB School of Pharmacy's Geriatric Imperative Course. These articles have been selected by an expert panel of reviewers including Peter P. Lamy, Ph.D., Kathleen Gondek, M.S., and Ilene Zuckerman, Pharm.D. of the School.

could lead to an inappropriate increase in the dosage of antipsychotic causing the worsening of symptoms. It is important that this possibility be recognized during therapy.

Drug induced parkinsonism, like idiopathic parkinsonism, has the classic symptoms of bradykinesia, cogwheel rigidity, resting tremor and loss of postural reflexes. Symptoms usually arise in the first or second weeks of therapy and taper after three months or so due to the development of tolerance to the drug.[3] Antiparkinsonian agents are sometimes used to treat early symptoms. Thirteen percent of all patients on antipsychotics develop drug-induced parkinsonism, and rates are thought to be higher among the elderly population.[2]

The most serious of the extrapyramidal syndromes, tardive dyskinesia, is a disorder characterized by involuntary choreoathetoid movements of the face, mouth, lips, tongue and limbs. The onset of tardive dyskinesia is relatively late, not occurring for perhaps months or years after the initiation of antipsychotic therapy. The condition is considered to be serious because, if antipsychotic therapy is not discontinued after the onset of symptoms, the effects may become permanent. The incidence of tardive dyskinesia may be as high as 40 percent[5] in the elderly patient on antipsychotic therapy, who is much more prone to its development. The elderly are also more likely to sustain longer lasting or permanent effects of tardive dyskinesia than younger patients.

The above extrapyramidal effects occur more commonly with high potency antipsychotics like haloperidol than with low potency agents like thioridazine.[3]

Another potentially serious side effect of the antipsychotics is orthostatic hypotension. The orthostatic hypotension is caused by alpha 1 receptor blockade by the antipsychotics and is more common with the use of low potency agents.[2] Orthostatic hypotension is already present to some degree in elderly patients due to the loss of vascular compliance that occurs naturally with age and can be exasperated by the drug therapy. The condition may cause syncope with a resulting increase in the occurrence of falls and fractures[2,5,9] and may also increase the risk of heart attack and stroke in patients with previously low cardiac output.[5]

One of the effects of dementia is a decrease in the neurotransmitter acetylcholine. Antipsychotics exert an anticholinergic effect, so that it can be seen that there is a greater potential for the development of anticholinergic side effects with the use of these drugs in the demented elderly. The anticholinergic side effects can be peripheral or central. Peripheral effects include urinary retention, constipation, dry mouth and blurred vision. Central effects include memory loss, confusion, disorientation and occasionally psychosis. Again, here we have the possibility of misdiagnosing these central effects as a worsening of behavioral or mental status. All these side effects occur with a greater frequency when low potency agents are used.[2,5]

Perhaps the most common side effect of antipsychotic use is sedation which is caused by histamine 1 receptor blockade.[10] Although the sedative effect may actually seem to be a benefit in the treatment of behaviors such as severe agitation, it can also lead to increased risk of falls and fractures as well as further reduction in the level of cognitive function in dementia patients.[10]

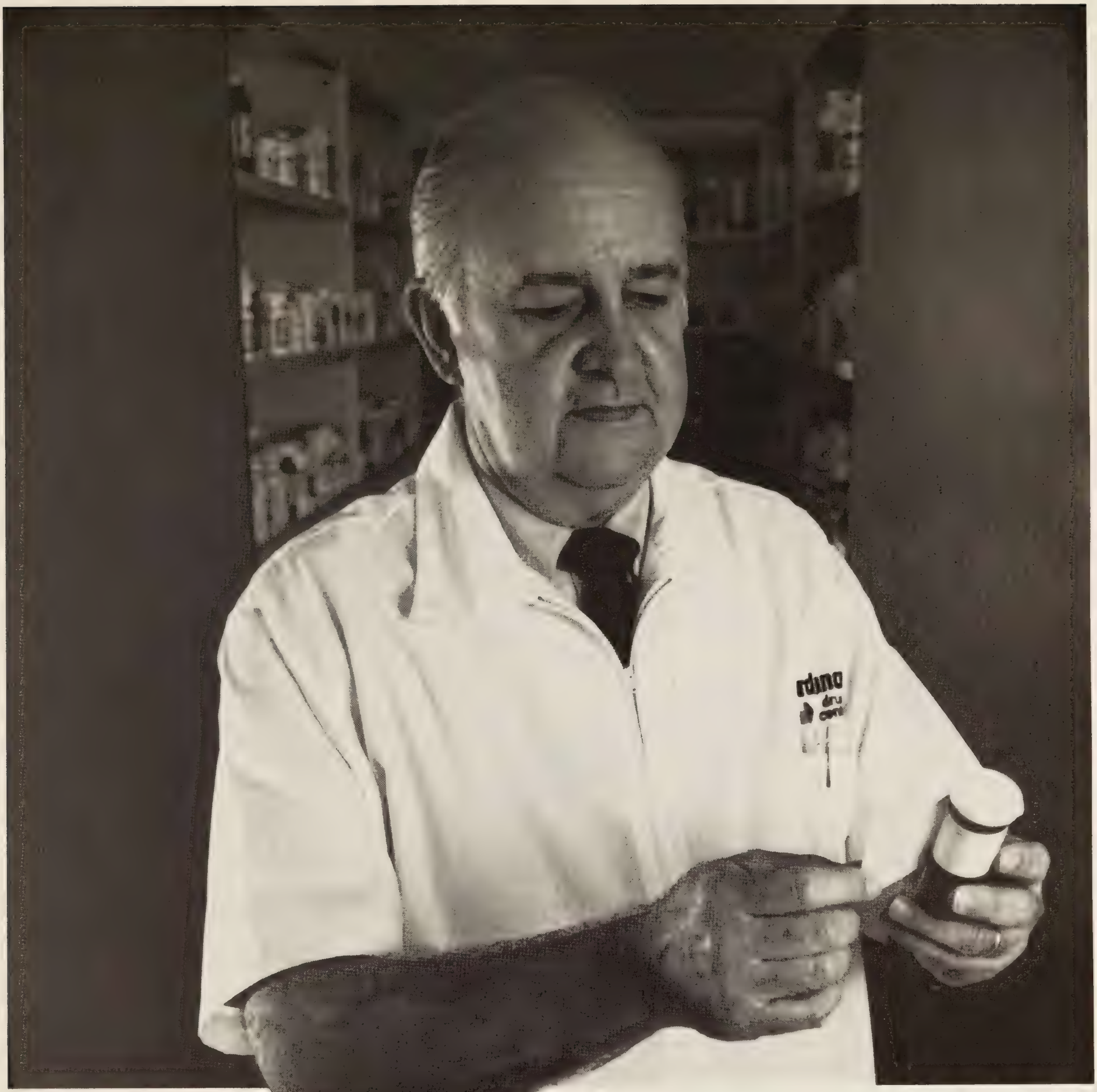
The potential for cardiac problems to develop as a result of arrhythmias is increased when patients are on antipsychotic therapy. Life threatening arrhythmias like ventricular tachycardia have been observed to occur even at therapeutic dose levels.[5] This can be of much higher concern in patients with pre-existing conduction disturbances.

The above side effects of antipsychotic use occur with greater frequency in the demented elderly due in part to the pharmacokinetics and pharmacodynamic changes that occur with age. The pharmacokinetics components of absorption, distribution, metabolism, and elimination are affected in varying degrees with age. Absorption seems the least affected by age. Antipsychotics are absorbed passively across the intestinal wall and therefore no changes in absorption rate or extent are seen with age.[4] Significant changes in drug distribution do occur with age. Lean body mass and total body water both decrease with age, whereas the percentage of body fat increases. The antipsychotic drugs are largely highly lipid soluble and with the increase in body fat the volume of distribution for lipid soluble drugs can increase significantly.[2,3] Therefore an increase in distribution and storage of antipsychotic drugs into the fatty tissues is seen in elderly patients.[2,3] This can result in prolonged drug action and drug accumulation which can increase the risk of side effects in the elderly. Also effects of antipsychotic drugs and their side effects may persist after the cessation of therapy which is a possibility the health care provider should be aware of.[3]

The liver is the major organ responsible for the metabolism of antipsychotic drugs. A decrease in the liver size and a decrease in liver blood flow are seen in the elderly but no direct correlation has been observed between this and the metabolism of drugs.[2,3] What has been seen is that with drugs like thioridazine that are metabolized by phase 1 reactions to an active metabolite may have a decreased clearance in the elderly and may accumulate.[2,3]

Finally, renal function in the elimination process decreases with age, but due to the high renal reserve and the lack of dependence on the kidneys for the elimination of antipsychotic drugs no problems are created here. Some antipsychotic drugs are protein bound and in the elderly a significant reduction in serum albumin levels between 15–25 percent have been observed.[3] With the reduction in available albumin for binding the

Continued on page 23. . . .



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drug, the amount of free drug circulating in the plasma and getting to sites of action is increased. There is therefore an increased potential for side effects in the elderly if dosages are not adjusted.

Pharmacodynamic changes that occur in the elderly often make them more sensitive to the effect of drugs, particularly the drugs that act on the central nervous system like the antipsychotics.[2,3] Pharmacodynamic changes in the elderly include decreased dopamine and acetylcholine levels in the central nervous system and some neuronal loss. Patients with dementia have significant loss of acetylcholine producing cells in the brain which magnifies the effect of neurotransmitter loss that occurs with age.

Therefore, the demented elderly are particularly prone to the anticholinergic side effects of the antipsychotics and usually require much lower doses than younger patients.[2]

The elderly are often on a variety of medications which can lead to an increased risk of drug interactions while on antipsychotic therapy. Concurrent therapies with tricyclic antidepressants, CNS depressants, antihypertensives and others should all be closely monitored to decrease the risk of interactions and side effects.[5,7] Some drug therapies initiated with demented patients not on antipsychotics could have the potential to exacerbate the dementia, making the patient appear to worsen with the possible evolution of behavioral problems that may not be recognized as being medication induced.[2] This shows the need for careful evaluation before the initiation of antipsychotic therapy.

With the many drawbacks in the use of antipsychotics in the treatment of the elderly demented, efforts should be made to treat the problem with non-pharmacologic measures. A major contributing factor to the development of disruptive behaviors in dementia patients appears to be increased stress.[2] Stress can arise due to the emotional impact of the patient's realization that his cognitive abilities are failing. Also excess stimulation or confusing activities or surroundings can add to stress. The move to an institution or nursing home is often a promoter of deteriorating behavior due to the stress put on the patient created by the new and unfamiliar environment. An attempt should be made to provide for the patient an environment that is stable and constant and a daily routine that is predictable and non-disruptive.[15]

It is evident that providing the ideal non-pharmacologic therapies may either not be possible or may not suffice in the treatment of behavior problems in the demented elderly. In these cases the implementation of antipsychotic therapy may be indicated. At such time that a decision is made to implement therapy, it becomes extremely important to follow certain guidelines in order to minimize the negative effects that can be associated with antipsychotic use. First identification of the symptoms to be treated should be clear.[2,10] This allows for baseline reference point from which to monitor the therapeutic efficacy of the drug. Studies have not shown that any one antipsychotic to be more effective than the others;[2] therefore, the selection of the appropriate agent for a given patient should be based on the side effect profile in that patient.[2,5,10] To minimize side effects, health care providers should give the smallest effective dose of the drug. Studies have shown that in the elderly, in particular, doses of as little as one fifth of the usual adult dose have been effective.[2] Patients on other drug therapies should be closely monitored for potential drug interactions with the antipsychotics. If there is a suspected interaction, the agent should be changed or therapy discontinued. Any antipsychotic therapy in elderly patients should be periodically terminated in order to access the need for continued use.[4] Many patients with a history of behavior problems show decreased incidence of these behaviors with time and may not require maintenance therapy. Also stopping therapy may allow the detection of early signs of extrapyramidal syndromes like tardive dyskinesia that may be masked by maintenance therapy.[4]

Ideally, all the above criteria should be followed. Unfortunately in the nursing home or other institutional facility understaffing may create a situation where antipsychotic therapy may not be used appropriately. Studies have shown a great variety in the level of antipsychotic use in different nursing homes that were demographically similar. Rag, et al., found rates for patients on chronic therapy ranged from a low of zero to a high of 46 percent.[9] In the same study a large variation was found in the prescribing habits of physicians. Attention to these issues has been given in the popular press with some accusations of misuse of antipsychotic as chemical restraints. It would seem that this kind of attention will undoubtedly head to further investigation in the future. Antipsychotics were prescribed at a significantly greater rate by rural doctors in family practice and by those graduating between 1950–59, the period of major growth in antipsychotic use.[9]

With the ever increasing numbers of elderly patients diagnosed with dementia, there has come an increased need to provide treatment for the often associated problems of disruptive behaviors, severe agitation and psychosis. Although no one treatment modality has been shown to be completely effective in this regard, antipsychotic drug therapy has been demonstrated to have some limited efficacy.[1,6] Unfortunately, antipsychotic use particularly in elderly patients frequently carries with it an extensive side effect profile that includes orthostatic hypertension, anticholinergic effects, sedation and cardiac toxication which can be serious and lead to complications and extrapyramidal syndromes like tardive dyskinesia that may be permanent. Antipsychotic therapy in the elderly is further complicated by age related pharmacalometic and pharmacodynamic changes and by interactions that may occur in the all too frequent multidrug therapies older adults are likely to be on.

Non-pharmacological management of the problems presented by the elderly patient with dementia is considered first line, but may not be adequate in more difficult cases. Here antipsychotic therapy may be indicated.

Before and during the implementation of antipsychotic therapy, it is imperative that the health care provider follow the appropriate guidelines for antipsychotic use. Defining the target symptoms to be treated, determining the agent, dose and time course of treatment, and effectively monitoring the patient are all guideline for optimizing efficacy and minimizing adverse effects in the use of antipsychotic drugs.[2,10] It has been observed that these guidelines are not always followed and that some misuse and antipsychotics is currently occurring. Efforts should be made to further investigate these findings and attempt to correct them.

Finally, increased efforts in research and development need to be made in an attempt to find more effective and safer alternatives to the potentially dangerous antipsychotics used in the management of the demented elderly.

REFERENCES

1. Barnes, K, Veith, R, Okimota, J., et al.: Efficacy of Antipsychotic Medications in Behaviorly Disturbed Dementia Patients. Am. J. Psychiatry, 1982; 139:1170–1179.
2. Eimer, M. Management of the Behavioral Symptoms Associated with Dementia. Primary Care, 1989, June; 16(2):431–437.
3. Jenike, M. A. Psychoactive Drugs in the Elderly: Antipsychotics and *Anxiobotics*. Geriatrics, 1988, Sept.; 43:53–65.
4. Maletta, G. J. Use of Antipsychotic Medication in the Elderly. Clinical Practice,1988, March; pp. 175–215.
5. Peabody, C. A., Warner, M. D., Whiteford, H. A., Hollister, L. E. Neuroleptics and the Elderly. J. Am. Geriatric Soc. 1987; 35:233–238.
6. Petrie, W. M., Ban, T. A., Barnes, S., et al. Loxapine in Psychogeriatrics: A Placebo and Standard Controlled Clinical Investigation. J. Clin. *Psychopharmocol,* 1982; 2:122–126.
7. Raskind, M. A., Risse, S. S. Antipsychotic Drugs and the Elderly. J. Clin. Psychiatry, 1986, May; 46 (Suppl. 5):17–22.
8. Raskind, M. A., Risse, S. C., Lampe, T. H. Dementia and Antipsychotic Drugs. J. Clin. Psychiatry, 1987, May; 48 (Suppl. 5):16–18.
9. Ray, W. A., Federspiel, C. F., Schaffner, W. A. A Study of Antipsychotic Drug Use in Nursing Homes: Epidemiologic Evidence Suggesting Misuse. Am. J. Public Health, 1980; 70:485–491.
10. Wragg, R. E., Jeste, D. V. Neuroleptics and Alternative Treatments: Management of Behavioral Symptoms and Psychosis in Alzheimer's Disease and Related Conditions. Psychiatr. Clin. North Am. 1988; 11:195–210.

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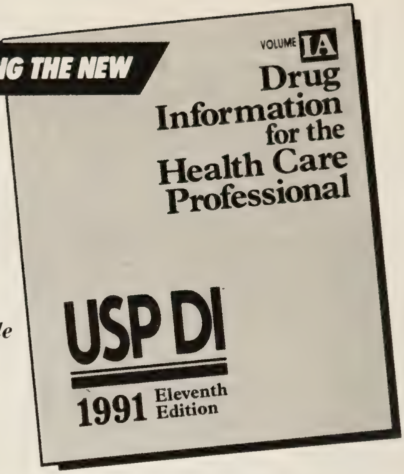

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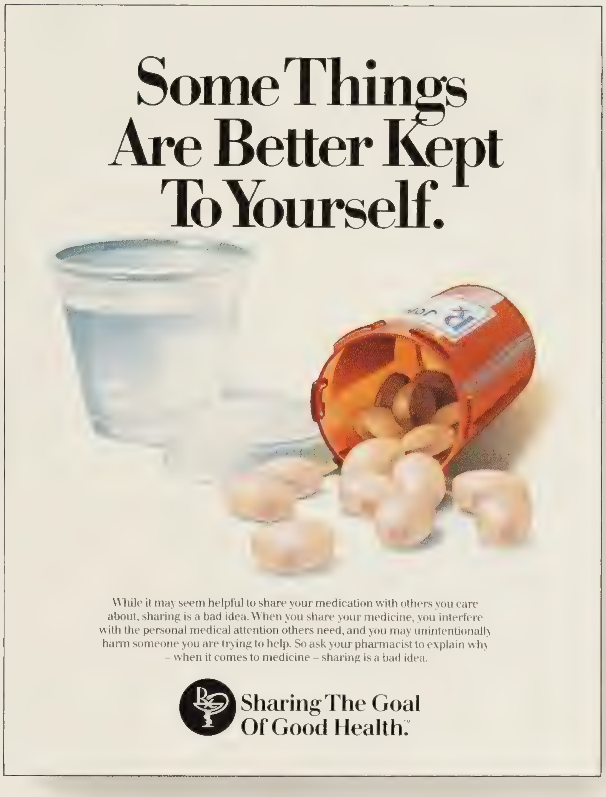

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Social Security *News*

September 1990

Focus On Retirement

It pays to delay retirement under Social Security rule

Many people may not realize that the longer they delay retirement, the higher their Social Security benefits will be, Social Security officials say.

Credits are given for each month that a person over 65 delays retirement. These credits increase benefits by 3.5 percent a year for persons retiring in 1990. As of this year, credits will gradually increase each year until they increase benefits by 8 percent for people retiring in 2008.

These percentage increases, known as "delayed retirement credits," are applied to a person's full age 65 benefit rate. A person delaying retirement from 65 to 70, for example, will find a 17.5 percent increase in the benefit he or she would have received if he or she had retired at age 65.

Increasing the rate of delayed retirement credits is a cost-saving feature of the 1983 Social Security amendments designed to encourage people to work longer and delay drawing benefits. The amendments also gradually increased the full retirement age when credits can be applied from 65 to 67 starting in the year 2000.

AARP launches "buddy system" for needy beneficiaries

The American Association of Retired Persons (AARP) has launched 35 projects in 11 States designed to identify members who can serve as representative payees for Social Security beneficiaries.

Representative payees are appointed by the Social Security Administration to manage benefit payments for the well-being of a beneficiary who is unable to manage his or her own funds. Most of the 1.2 million adult beneficiaries with payees are represented by a family member or by a public institution where they live, friends, State and County agencies, or other non-related individuals.

Recent studies found significant problems in obtaining representative payees in 20 States. The studies recommended a localized approach concentrating on particular areas of need.

AARP recruits and trains the volunteers from among its members and then works with Social Security to match up payees and beneficiaries. When a match is made, the volunteer payee must make a commitment to spend 2 hours a week taking care of the beneficiary's financial needs, and visit the beneficiary at least once a month. The payee keeps records of expenditures for AARP and Social Security to review.

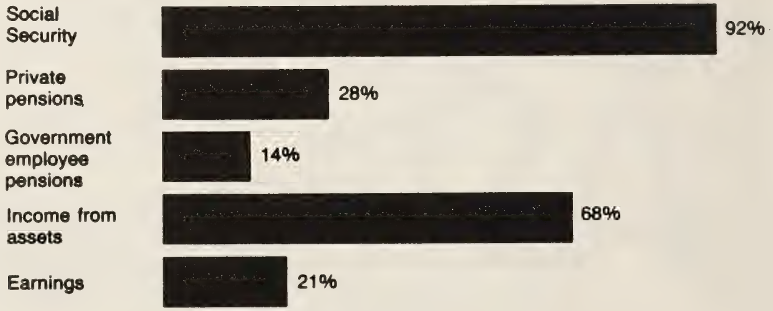
According to AARP Project Director John Hortum, volunteer payees report they like the satisfaction of seeing that they've made a difference in someone's life. "Most payees say they get as much out of it as they've given," Hortum said.

Hortum told of one volunteer who became a payee for a family of disabled adults living in a rural area. By setting aside money from each of their monthly checks, the volunteer was able to purchase plumbing supplies. Doing the work himself, he installed the family's first indoor plumbing.

Hortum stated that the more usual payee activities involved helping with shopping and letter writing. In addition to paying current bills, payees sometimes perform such services as arranging new payment agreements with a beneficiary's creditors or helping a homeless person find permanent housing.

Social Security is also pleased with the volunteer arrangement, officials report. They find the AARP takes care that its volunteers are carefully selected and well-trained.

Percent of aged receiving income from various sources, 1987



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Social Security News

September 1990

Focus on SSI

Outreach effort aimed at older women

Despite advances in the economic status of most retirees, older women remain one of the most economically vulnerable groups in our society, according to Social Security officials. For this reason, an outreach effort designed to reach people who may be eligible for Supplemental Security Income (SSI) has older women as one of its target groups.

Some 70 percent of Social Security beneficiaries age 85 and older are women. Their benefits are generally lower than men in the same age group because, historically, women have had lower-paying jobs or have taken time out of the labor force to care for their families. By 85, savings and other resources may be gone, often depleted by a husband's final illness or the increased living expenses of living alone as a widow.

SSI provides an income floor for many older people living with low Social Security benefits and reduced financial resources. About 75 percent of the SSI recipients over age 85 are women, and advocacy groups believe many more older women may be eligible for SSI.

Benefits are paid to people 65 and over, or blind, or disabled with low income and few resources. A maximum Federal payment of $386 for individuals is supplemented by most States according to local standards of need.

Not all income and resources count in figuring eligibility and payment amount. A person may have up to $2,000 in resources, not including a house, a car, and burial policies. The first $20 in income does not count and the first $65 in earnings does not count. If a person has no income other than earnings, then $85 plus one-half of the amount over $85 are not counted. It is possible for a person to have as much as $857 in monthly income before benefit payments are completely reduced.

SSI publications improved, easier to use

Revised versions of many of Social Security's SSI publications are available. The language has been simplified so SSI recipients and potential recipients should find the new editions much easier to understand.

When using these leaflets, it's helpful to know exactly what each is designed to do. Each booklet is designed to meet a specific informational need and people can save time and minimize confusion by using the right leaflet for the right purpose.

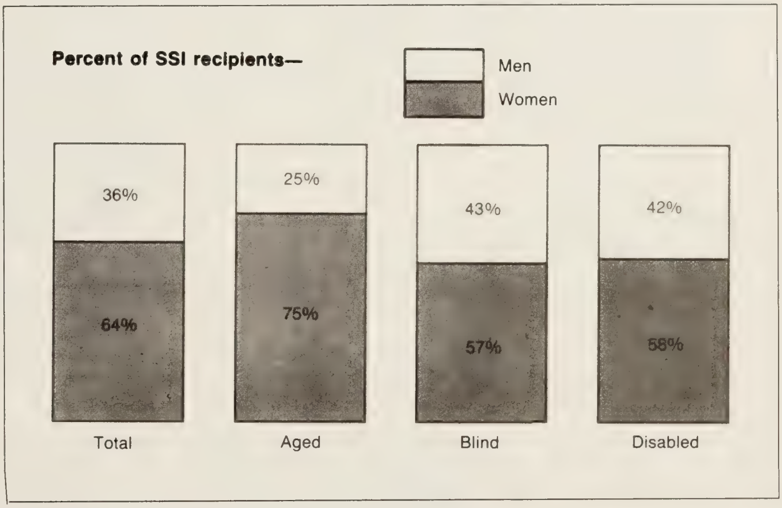
One informational piece is geared specifically to potential SSI recipients. A leaflet, *You May Be Able To Get SSI*, contains basic eligibility information to assist potential recipients in determining whether they may be eligible.

Another booklet, *Supplemental Security Income*, is intended for the general public as well as potential recipients. It provides a comprehensive description of the SSI program, explaining what SSI is, who can get it, how to apply, what the eligibility requirements are, and detailed information about the income and resource limits. It also describes the other help available to SSI recipients, such as food stamps, Medicaid, and social services.

Two publications are being produced specifically for groups and organizations that deal with SSI recipients. *A Guide to SSI For Groups and Organizations*, provides detailed explanations of eligibility conditions, provisions to help recipients work, payment amounts, State services and supplements, and recipient reporting responsibilities. It also explains how SSI claims are processed and provides information about what groups and organizations can do to help SSI recipients.

Additionally, a one-page SSI desktop guide listing eligibility requirements will soon be available. The back of the guide contains information about how a particular State treats supplements, Medicaid, and Interim Reimbursement Agreements.

Copies of these publications can be obtained at any Social Security office or by calling Social Security at 1-800-2345-SSA (1-800-234-5772) between 7:00 a.m. and 7:00 p.m. weekdays. The best times to call are early in the morning and early in the evening.



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USP DRUG PRODUCT QUALITY Review
A PUBLICATION OF THE USP DRUG PRODUCT PROBLEM REPORTING PROGRAM

No. 12

COMING TO TERMS WITH PHARMACY TERMS

Many pharmacists corresponding with the USP Drug Product Problem Reporting Program (DPPR) often question standard labeling terms utilized in pharmacy practice. Two such examples follow:

Example 1: A pharmacist questioned a firm's use of the term **single-dose** on the label of a 50-mL vial of Potassium Phosphates Injection. The reporter felt that the label information might lead one to believe that the entire vial is to be given as one dose and thus could encourage medication errors.

Example 2: Reports were received on two ophthalmic preparations, each claiming to be preservative-free. One of the preservative-free preparations listed EDTA on the label, yet the reporter understood EDTA to be a **preservative**. Similarly, a second reporter noted Povidone to be present in yet another preservative-free product.

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USP REVIEW

SINGLE-DOSE CONTAINER, MULTIPLE-DOSE CONTAINER, AND PHARMACY BULK PACKAGE

A **Single-dose Container** is defined in *USP XXII* p. 9 as "a single-unit container for articles intended for parenteral administration only". In order to understand this definition fully, one must refer to the definition for the term Single-unit Container. A Single-unit Container is defined as a container designed to hold a finished drug product intended for use *promptly after the container is opened.*

In other words, the term single-dose applies only to injectable medications intended for use promptly after opening. It should not be understood that the entire contents of the vial must be used. Rather, after withdrawing the medication for use, any remaining medication should be discarded. Single-dose injectables may or may not contain a preservative. Single-dose injectables are limited to a volume of one liter, except when intended for irrigation, hemofiltration or dialysis, or parenteral nutrition purposes.

In contrast, the term **Multiple-dose** describes a container for injectable medication that is no larger than 30 mL in size, unless permitted by the USP monograph. All multiple-dose injectable medications must contain an antimicrobial preservative to inhibit bacterial growth. Since antibacterials are inherently toxic, their presence should be considered whenever large doses are prepared for children and infants. This is one reason that limits have been placed on the maximum container size.

A **Pharmacy Bulk Package** is defined in *USP XXII* p. 1470 as "a container of a sterile preparation for parenteral use that contains many single doses. The contents are intended for use in a pharmacy admixture program and are restricted to the preparation of admixtures for infusion or, through a sterile transfer device, for the filling of empty sterile syringes". The product may or may not contain a preservative. A pharmacy bulk package allows manufacturers to package injectable medications in larger quantities to provide a cost-effective admixture program. They are intended only for use under a laminar flow hood or in a clean room environment.

One of the main differences in the packaging of injectable medications is the material used in the closure. The elastomeric material used for the closure of a multiple-dose container is designed to maintain a seal even after multiple needle insertions. Single-dose containers, since they are intended for single entry, do not need and may not use a type of closure material that will reseal after a puncture. A pharmacy bulk package is intended to have only one or two entries into the closure. Through use of a transfer set, it is then possible to draw out many single doses.

PRESERVED VERSUS PRESERVATIVE-FREE

A **preservative** is usually considered to be an article added to a drug product to inhibit microbial growth. *USP XXII* pp. 1857-1858 lists pharmaceutic ingredients according to their category of use. Since EDTA (Edetic Acid) does not inhibit microbial growth, it is not listed as an antimicrobial preservative. Rather, Edetic Acid is categorized as a chelating agent.

Chelating agents are often added to drug products in order to stabilize preparations that may be easily oxidized in the presence of trace metals. If trace metals are held by chelating agents, they are not free to enhance oxidation. Therefore, a drug product may last longer or be less subject to decomposition. Although not technically accurate, it is not unreasonable to think that EDTA may be a "preservative" since it does help to maintain the stability of the finished dosage form.

For the ophthalmic preparation containing Povidone, the product is also correctly labeled as preservative-free. The *USP XXII* classifies Povidone as a suspending and/or viscosity-increasing agent. Note that Povidone should not be confused with the product Povidone-Iodine. Povidone-Iodine *is* antimicrobial in nature and is often used to cleanse the skin prior to sterile procedures.

Pharmacists must often make decisions based upon information provided on the label. It is important to fully understand the labeling terms in order to make an informed decision.

To report drug product problems or for further information, call the USP DPPR Program at 1-800-638-6725.

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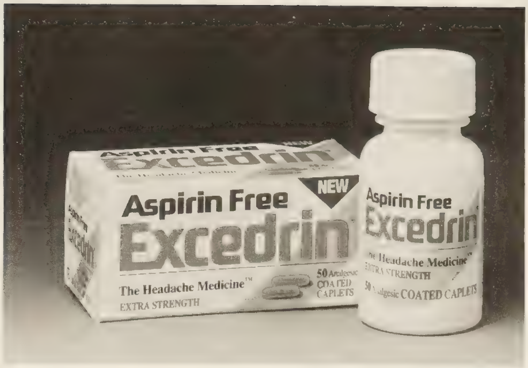
Issued 7/90

NutraSweet
Cristal Non Stick
18 STICKS
Peppermint
EXPRESSLY FOR NOT PROMOTING TOOTH DECAY
NEW
NutraSweet
Cristal Non-Stick
18 STICKS
Spearmint
EXPRESSLY FOR NOT PROMOTING TOOTH DECAY

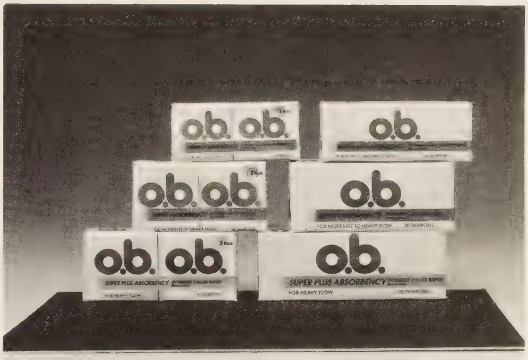
Warner-Lambert Company has launched "Cristal," a nonstick sugarless chewing gum. The new product is being marketed in spearmint and peppermint flavors to consumers 35 and older who wear dentures or have crowns, caps, bridges, and other dental fixtures. "Cristal" is currently in test-marketing in the southwest and will soon be available nationwide.

Desenex
Antifungal Ointment
Desenex
Kills Athlete's Foot Fungi
Desenex
Kills Athlete's Foot Fungi
Relieves Itching

That old athlete's foot standby, Desenex, has a new look! After considerable market research, the completely redesigned packages are aimed at capturing and retaining market share in the ever burgeoning OTC topical anti-fungal product market.


NEW
Aspirin Free
Excedrin
The Headache Medicine™
EXTRA STRENGTH
50 Analgesic COATED CAPLETS
Aspirin Free
Excedrin
The Headache Medicine™
EXTRA STRENGTH
50 Analgesic COATED CAPLETS

Bristol-Myers has rolled out a new analgesic, Aspirin Free Excedrin. Available in easy-to-swallow, red filmcoated caplets, Aspirin Free Excedrin is available in packages of 24's, 50's and 100's. Bristol-Myers is launching a national television and print advertising campaign to stimulate consumer interest and sales that will last into 1991.


o.b.
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o.b.
SUPER PLUS ABSORBENCY
FOR HEAVY FLOW

Capitalizing on environmental concerns, Personal Products Company has announced a new ad campaign for its "o.b." tampon line. The brainchild of a woman gynecologist, "o.b." was first marketed in 1982 and is the only tampon available that doesn't require a plastic or cardboard tampon.

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Continuing Education

Continuing Education Quiz

The Maryland Pharmacist **SEPTEMBER 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by January 1, 1991. A continuing education certificate for one contact credit will be mailed to you within 30 days. Please type or print clearly.

Name ______________________________

Social Security Number ______________________________

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City/State/Zip ______________________________

Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? ____________ minutes

OTC Aspirin, Part I

1. Which of the following is a true statement?
   a. An increased gastric pH decreases the water solubility and decreases the absorption of aspirin.
   b. If gastric acidity increases, the rate of absorption of aspirin decreases.
   c. When gastric acidity increases, aspirin is more ionized.
   d. It is difficult to prove that changes in gastric pH have significant therapeutic effects on aspirin in all patients.

2. Products in the arachidonic acid metabolic pathway react with all of the following endogenously-produced substances EXCEPT:
   a. angiotensin.
   b. bradykinin.
   c. histamine.
   d. serotonin.

3. Patients with kidney disease should check with their physician before taking which of the following salicylates to self-medicate minor pain?
   a. Choline salicylate
   b. Magnesium salicylate
   c. Sodium salicylate
   d. Salicylamide

4. The pharmacologically active moiety of aspirin is:
   a. acetaminophen.
   b. salicylamide.
   c. salicylic acid.
   d. sodium salicylate.

5. The various methods used in manufacturing commercially available aspirin dosage forms affect, to LEAST extent, its:
   a. intensity of pharmacologic activity.
   b. duration of action.
   c. mechanism of pharmacologic activity.
   d. onset of action.

6. Aspirin is commercially available in all of the following dosage forms EXCEPT:
   a. chewable tablets.
   b. intravenous solutions.
   c. microencapsulated tablets.
   d. suppositories.

7. Prostaglandin-induced pain is accompanied by all of the following EXCEPT:
   a. enhanced sensitivity to touch.
   b. increased bleeding.
   c. long lasting pain.
   d. skin tenderness.

8. Which of the following aspirin derivatives has shown the LEAST evidence of effectiveness?
   a. Choline salicylate
   b. Sodium salicylate
   c. Magnesium salicylate
   d. Salicylamide

9. The major therapeutic analgesic action of aspirin appears to be mediated:
   a. centrally, in the cerebral cortex.
   b. centrally, at the opioid receptors.
   c. peripherally, at the salicylate receptors.
   d. peripherally, to block impulses generated to the brain.

10. The fact that aspirin is absorbed by passive diffusion means that:
    a. its ionized components are more easily absorbed.
    b. its unionized, undissociated form is more easily absorbed.

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"Rx" LICENSE PLATES are still available through the Association. When you receive your license renewal form, contact Mary Ann at the Association (727-0746) for details. The plates say "Maryland Pharmacists Association" in addition to "Rx" and the number. This offer is open to members and their families only.

THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Harold Katcoff at 358-7036.

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The Maryland Pharmacist

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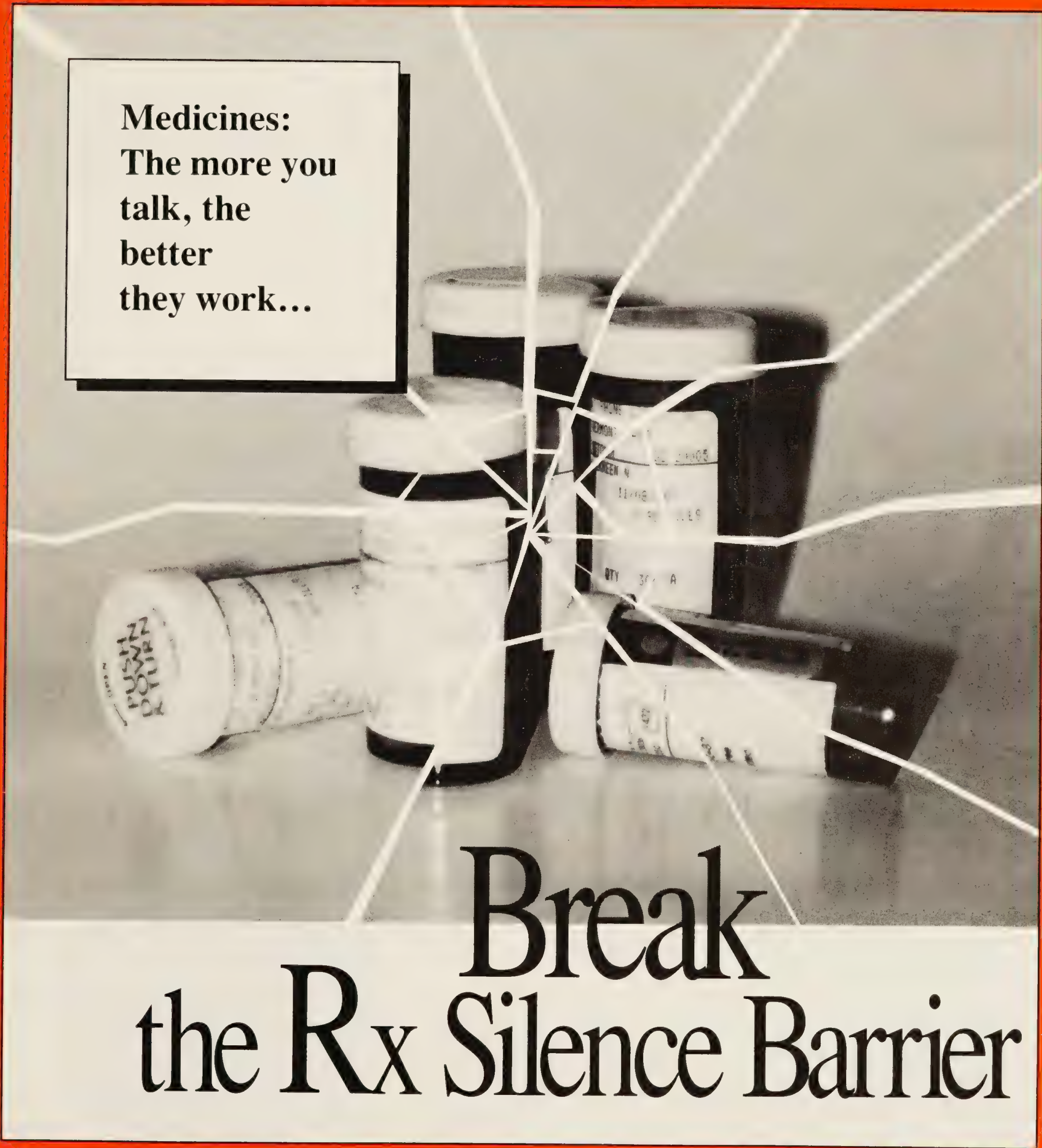

Medicines: The more you talk, the better they work…

Break the Rx Silence Barrier

THE MARYLAND PHARMACIST

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OCTOBER, 1990 VOL. 66 NO. 10

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STATE OF MARYLAN

·PROCLAMATION·

From the Governor of Maryland, William Donald Schaefer

"TALK ABOUT PRESCRIPTIONS" MONTH
OCTOBER, 1990

WHEREAS, *The good health and general well-being of Maryland's citizens of all ages is nurtured and enhanced by the proper use of prescription medicines which, when correctly taken under the direction and guidance of concerned health care professionals, can positively impact upon the life experiences of our people; and*

WHEREAS, *It is estimated that up to half of all medicines prescribed are used incorrectly - contributing to prolonged illness, avoidable side effects and interactions, unnecessary hospitalizations, and even death... grim statistics which are unfortunately reinforced with the findings that approximately 96% of patients do not ask questions about their medicines; and*

WHEREAS, *The National Council on Patient Information and Education (NCPIE), a coalition of some 260 organizations representing medicine, pharmacy, nursing, dentistry, allied health care professions, consumer organizations, government, industry and voluntary health agencies, remains steadfastly committed to helping individuals to educate themselves about the prescription medicines they use and to seek advice from their health care professionals about the medicines prescribed for them; and*

WHEREAS, *Maryland is pleased to join with dedicated NCPIE affiliates and concerned health care professionals throughout this State in promoting the special theme - "Break the Rx Silence Barrier: Talk About Prescriptions"... a valuable campaign designed to ensure the safe and effective use of medicine by people in the name of caring.*

NOW, THEREFORE, *I, WILLIAM DONALD SCHAEFER, GOVERNOR OF THE STATE OF MARYLAND, do hereby proclaim October, 1990 as "TALK ABOUT PRESCRIPTIONS" MONTH in Maryland, and do commend this observance to all of our citizens.*

Given Under My Hand and the Great Seal of the State of Maryland,
this 1st *day of* October
One Thousand Nine Hundred and Ninety

William Donald Schaefer
Governor

Secretary of State

Continuing Education

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Counseling Consumers on OTC Aspirin Product Use Part II: Adverse Effects and Toxicity

by J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

and

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

Gossel

Wuest

Goals

The goals of this lesson are to:

1. review the adverse effects and drug interactions, and toxicology of salicylates; and
2. discuss specific patient information on methods to minimize salicylate-induced toxicity and drug interactions, and how to treat these when appropriate.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from

Merrell Dow U.S.A. & Lakeside Pharmaceuticals
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Merrell Dow Pharmaceuticals Inc.

Objectives

At the conclusion of this lesson, participants should be able to:

1. identify specific adverse effects and toxicologic reactions, and drugs reported to interact with salicylates;
2. demonstrate an understanding of the mechanisms that cause adverse effects and toxicity;
3. discuss the relationship between aspirin and Reyes syndrome; and
4. choose from a list, specific points for advising consumers about side effects, drug interactions, and toxicity with aspirin, and methods to best prevent or treat them.

Until the mid-1980s, aspirin was the most widely used drug in the U.S. Because of this broad use, much data have accumulated on its adverse reactions and toxicity.

Therapeutic applications were presented in Part I of this two-part series. This lesson reviews adverse effects and significant drug interactions reported for aspirin (Table 1). Treatment of overdose is also included.

Blood Toxicity

Aspirin occasionally causes bleeding from skin wounds, the throat following tonsillectomy, dental extraction sites, the nose, rectum, and vagina. A primary mechanism is the effect of aspirin (but not its non-acetylated derivatives) on platelet function. This results in increased bleeding time and possibly other outcomes such as fibrinolysis (destruction of the fibrin mat).

In high doses (i.e., 2 to 3 gm or more daily for several days), aspirin may cause hypoprothrombinemia. This is characterized by decreased prothrombin (clotting factor II) production.

The alteration does not normally result in clinically significant changes

Table 1

Summary of Safety Considerations with Aspirin Use*

BLOOD: Aspirin interferes with blood clotting

CENTRAL NERVOUS SYSTEM: Taken in overdose, aspirin produces stimulation (which is often manifest as tinnitus) followed by depression of the central nervous system.

GASTROINTESTINAL TRACT: The drug may potentiate peptic ulcer and cause stomach distress or heartburn.

HYPERSENSITIVE INDIVIDUALS: Aspirin produces allergic and anaphylactic actions in hypersensitive individuals.

IRON DEFICIENCY ANEMIA: Aspirin used chronically may cause a persistent iron deficiency anemia.

KIDNEY: Aspirin may cause an increase in existing severe kidney disease.

LIVER: High doses of aspirin may produce a reversible hepatic dysfunction.

PREGNANCY: Aspirin interferes with maternal and infant blood clotting, and lengthens the duration of pregnancy and parturition.

*Although not reported for all other salicylates, similar effects can most likely be expected from them as well.

in the coagulation mechanism, except in persons who are particularly susceptible. These include individuals receiving anticoagulant therapy, and arthritic patients who consume large doses of aspirin. Persons with liver disease, which limits the production of prothrombin, and individuals with malabsorption syndrome leading to a deficiency in vitamin K (required for prothrombin synthesis) may also be at risk.

Aspirin also increases bleeding time (time that bleeding continues after a puncture of about 1 mm in the skin). Extended bleeding time occurs with doses of aspirin far below those required for hypoprothrombinemia. For example, within two hours of ingesting 1.3 gm aspirin, a small but significant increase in bleeding time can be noted in normal subjects.

Small doses also inhibit platelet function. A 350 mg dose has been reported to increase bleeding time by approximately 3 minutes. The effect occurs because of aspirin interference with release of adenosine diphosphate (ADP) which prolongs bleeding time.

Ibuprofen also causes this same action, but to lesser extent. Salicylate salts do not have an effect.

Hemorrhage following topical application in gargle or aspirin-containing chewing gum has been noted. Hemorrhage was observed in 8 of 100 post-tonsillectomy patients who received the drug topically in the mouth and throat. Bleeding developed on the sixth or seventh post-operative day, and could be controlled only with packing and suturing. No hemorrhaging occurred in 100 patients medicated in an identical manner with acetaminophen.

It is recommended that oral aspirin product formulations which are chewed contain the following warning: "Do not take this product for at least 7 days after tonsillectomy or oral surgery, except under the advice and supervision of a doctor."

Aspirin-induced platelet dysfunction can significantly promote bleeding when the "platelet plug" is the primary factor in hemostasis. This is the usual case for oozing hemorrhage, such as that which occurs in capillary beds.

When bleeding occurs from ulcers or other areas involving extensive tissue arterials, platelet plug hemostasis is not the prime factor. This bleeding requires hemostatic mechanisms other than platelet plugs, i.e., vasoconstriction and permanent fibrin clots.

Some studies involving direct endoscopic observation of bleeding lesions have shown that bleeding occurs most often from inflamed mucosal tissue, which is partially denuded of surface epithelium exposing engorged, dilated capillaries in the underlying tissue.

Furthermore, elimination of platelet function alone is usually not sufficient to initiate bleeding. More information is needed on the relationship between gastrointestinal bleeding and platelet function.

Because aspirin can promote or increase bleeding, all preparations containing aspirin, regardless of formulation, must contain the following warning on their OTC labeling: "Caution, do not take this product if you have stomach distress, ulcers or bleeding problems except under the supervision of a doctor."

Central Nervous System Toxicity

Major adverse symptoms on the CNS are stimulation followed by depression. Stimulation causes various sequelae, including tinnitus (ringing, buzzing or "ocean-like" sounds in the ear), rapid breathing, confusion, unusual or bizarre behavior, vomiting, anemia, and generalized convulsions. These effects are seen in massive overdosing, and are not usual outcomes of occasional therapeutic doses of aspirin.

The first symptom of aspirin overdose is usually tinnitus. This appears when serum salicylate levels approach 20 mg/dL. However, persons with preexisting hearing loss will not experience it as plasma drug concentration increases. Salicylates may produce irreversible ototoxicity leading to permanent deafness.

Patients taking large doses of aspirin should be regularly monitored for hearing loss and tinnitus. Because this is an early and frequent indication of aspirin overdose, the following label warning on OTC products containing aspirin is warranted: "Stop taking this product if ringing in the ear or other symptoms occur."

Gastrointestinal Tract Toxicity

Aspirin induces a variety of effects on the GI tract. They range from relatively mild effects, such as stomach upset, to less frequent but more serious sequelae, including mucosal erosion, ulceration or life-threatening hemorrhage. The direct and indirect effects of aspirin in causing different forms of mucosal damage are complex. There is disagreement on the interacting variables related to drug use and the pathology involved, but one concept is universally held. That is, all nonsteroidal anti-inflammatory drugs can cause gastric erosion.

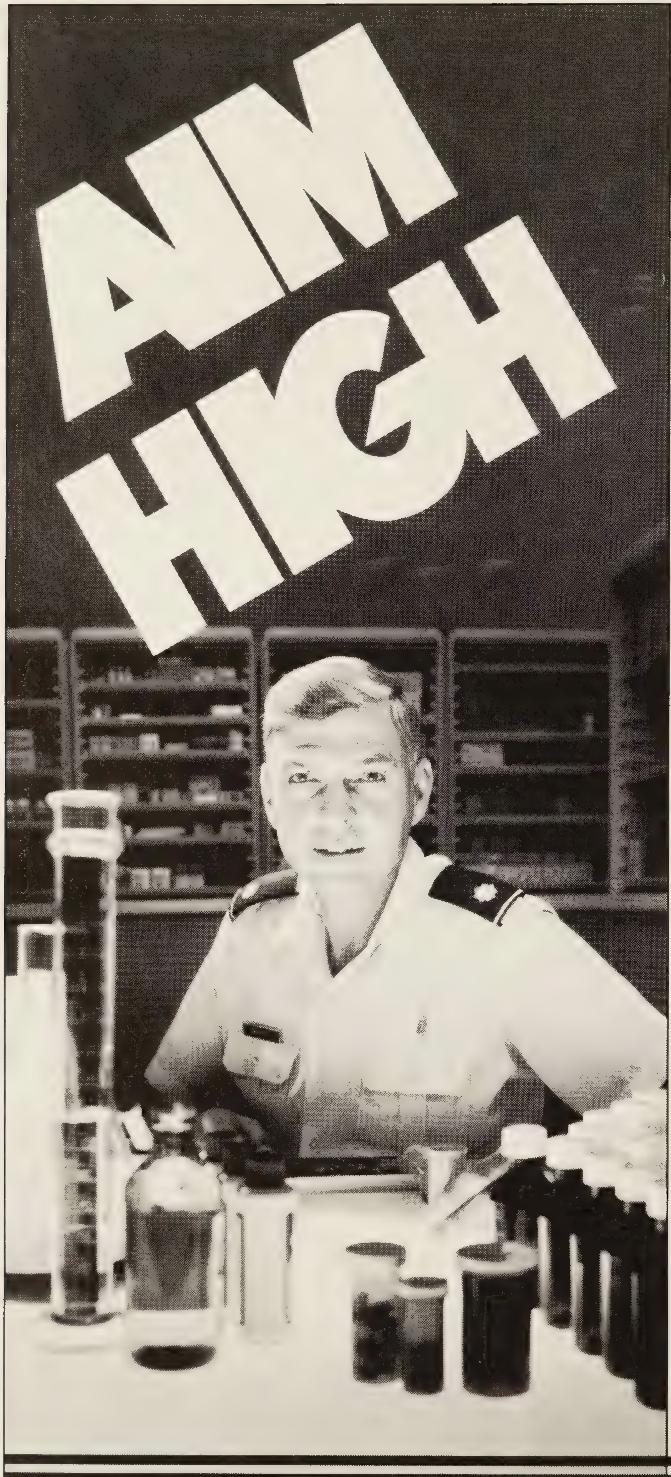
Particular attention has been given to claims that adverse effects may be reduced by certain dosage forms, such as buffered tablets or effervescent solutions. Although buffering can reduce the incidence of minor effects, it will not alter more serious disorders, such as massive bleeding.

Aspirin also causes direct local irritation of the mucosal lining of the GI tract. This occurs to some degree in otherwise healthy people. Prolonged contact with aspirin produces direct damage and sloughing of surface cells. Erosion can occur on both the oral and stomach mucosae with concentrated solutions, and with particles of plain, unbuffered, or combination aspirin tablets.

Aspirin-induced, acid-mediated gastric erosion is an important factor in some adverse gastrointestinal effects. It is probably associated with increased occult bleeding following single and multiple doses of aspirin, and may contribute at least to the beginning stages of aspirin-induced gastric ulcers. It probably also is a factor in hemorrhagic erosive gastritis, directly initiated by multiple doses of aspirin.

An adverse effect of aspirin, but not acetaminophen, on the mucosal lining of the GI tract is caused by the "ion trapping" phenomenon. Absorption of unionized aspirin (an acid) from the stomach into the blood carries hydrogen ions across the cell barrier. Once inside the cell, where the pH is higher, aspirin ionizes and hydrogen ion dissociates. Hydrogen ions release vasoactive substances such as histamine from mast cells, which initiate capillary bleeding. Eventually, aspirin diffuses into the blood thereby lowering the concentration of intracellular drug, and further damage is not seen.

Gastrointestinal bleeding can be worsened in the presence of alcohol. Alcohol alone does not increase the risk of bleeding, but it can potentiate



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AIR FORCE

the effects of aspirin.

Although enteric coated aspirin tablets are available, there is question as to whether they effectively reduce the incidence of gastrointestinal bleeding. It is felt, especially in individuals such as the elderly who are prone to bleeding, that this dosage form of aspirin will not significantly reduce bleeding. Ion trapping occurs within the stomach wall, not the intestinal mucosa.

Once aspirin is absorbed into the blood, it can promote bleeding from all gastrointestinal sites regardless of the original product formulation. The warning: "Caution, do not take this product if you have stomach distress, ulcers or bleeding problems, except under the advice and supervision of a doctor" applies to all OTC products containing aspirin, including enteric coated products.

Hypersensitivity Reactions

It has long been recognized that aspirin causes allergic reactions in hypersensitive individuals. Respiratory effects range from shortness of breath to severe asthmatic attacks. Actions on the skin include hives, angioedema (giant hives), and rash. Anaphylactic shock involving laryngeal swelling which blocks the air passages may cause a precipitous drop in blood pressure leading to shock, and death, if not rapidly treated.

The occurrence of reactions is estimated to be about 0.2 percent of the general population. A much higher incidence is found in certain subgroups. Up to 20 percent of asthmatics, for example, are hypersensitive to aspirin. The same number is also reported to experience worsening of chronic hives. Although extremely rare, death has occurred within minutes in hypersensitive individuals following ingestion of one tablet.

Cross sensitivity with other NSAIDs is also a problem. Again, while relatively rare, there is at least one documented case of an aspirin-sensitive patient going into anaphylactic shock and dying after one dose of indomethacin.

Because there is a known risk for severe aspirin hypersensitivity reactions, an FDA/OTC advisory panel concluded that high risk groups, such as asthmatics and persons with known allergic reactions to aspirin, should be warned not to ingest the drug without medical supervision. The warning statement: "This product contains aspirin. Do not take this product if you are allergic to aspirin or if you have asthma, except under the advice and supervision of a doctor" applies to these individuals.

Iron-Deficiency Anemia

Occult blood loss following aspirin is rarely of clinical significance, but prolonged use can result in greater bleeding in some patients and cause persistent iron deficiency anemia. This has been observed primarily in adults taking antiarthritic doses of aspirin (3 or more gm daily), but it can also occur with chronic-use of lower doses. One study that measured gastrointestinal blood loss after aspirin ingestion showed that 69 percent of 35 subjects who ingested 8 tablets daily lost some blood. Seventeen percent lost more than 6 mL daily. While insignificant in normal persons, it could cause a problem in patients with bleeding tendencies or borderline iron deficiency anemia.

Renal Toxicity

It has been suggested that aspirin damages the kidney. However, most reports expressly relate to combinations of analgesics that included phenacetin. Phenacetin is a known cause of renal damage and has been removed from the marketplace. An FDA/OTC advisory panel concluded that, although prolonged use of high doses of aspirin may cause kidney disease in rare instances, the risk is insignificant when only aspirin is involved.

The Boston Collaborative Drug Surveillance Program reported on aspirin use and renal function in over 6,400 patients. The results demonstrated no correlation between drug use and renal toxicity. Furthermore, other studies have shown that patients with rheumatoid arthritis who take large doses of aspirin do not develop significant renal damage. Until more data are available, patients with pre-existing kidney disease should not take large doses of aspirin over a prolonged period, unless under a physician's care.

Hepatic Toxicity

Hepatic dysfunction after aspirin ingestion is characterized by increased serum levels of glutamic oxalacetic transaminase (SGOT) and glutamic pyruvate transaminase (SGPT). Hepatic toxicity has been observed in children and adults treated for systemic lupus erythematosus or rheumatoid arthritis who require moderate to large doses of aspirin over several weeks or longer.

An FDA/OTC advisory panel concluded that although prolonged use of high doses may cause hepatic damage, the effect is dose related, dependent on the disease state for which aspirin is indicated, and a function of pre-existing liver disease. It therefore did not recommend a warning about it on OTC products.

Effects During Pregnancy

Aspirin ingestion during pregnancy causes various effects. Teratogenicity refers to malformation, not death, of offspring. Additionally, stillbirths and neonatal deaths, length and duration of pregnancy, and parturition time (length of labor and delivery) and impairment of hemostatic mechanisms in the mother and/or infant are other potential adverse effects of aspirin.

Retrospective surveys of mothers of malformed infants suggest that aspirin taken during pregnancy can be teratogenic. Such studies are difficult to interpret because, in many cases, mothers of malformed infants also took other drugs during pregnancy. Furthermore, many women have delivered normal infants after having taken aspirin during pregnancy.

The label warning to avoid aspirin during pregnancy is not directed at aspirin *per se*. Rather, it is a general statement. Women should avoid all drugs during pregnancy.

During the last two weeks of gestation, aspirin may prolong duration of pregnancy and parturition time, and induce abnormal labor. Some women experience an increased gestation period of 1 week or more. Labor may be lengthened by 70 percent.

Aspirin may threaten newborn infants when given within 2 weeks prior to delivery. It appears to affect clotting mechanisms of the newborn by diminishing Factor XII. This is especially important since infants metabolize drugs slowly and are particularly susceptible to central nervous system hemorrhage.

Effects on Other Drugs and Disease States

Table 2

Significant Drug Interactions Reported for Salicylates

ALCOHOL: Increased risk of GI side effects

ALKALIZERS, URINARY: Decreased plasma level of salicylates

ANTICOAGULANTS (coumarin derivatives, heparin): Increased risk of hemorrhage

ANTI-INFLAMMATORY AGENTS (steroids, NSAIDs, etc.): Increased risk of GI side effects

INSULIN, ORAL HYPOGLYCEMICS: Effects of these agents may be increased when large doses of salicylates are taken.

LAXATIVES (cellulose-containing): May bind with salicylates to reduce amount for absorption, thus, lowered plasma concentration

METHOTREXATE: May be displaced from plasma protein binding sites, and undergo reduced renal clearance. Net effect is potentially toxic methotrexate blood levels.

PROBENECID OR SULFINPYRAZONE: Uricosuric effect of these drugs is decreased when salicylates are taken concurrently.

Aspirin can potentiate the action of oral anticoagulants and antidiabetic drugs, interfere with uricosuric action of probenecid (Benemid) and sulfinpyrazone (Anturane), and enhance the ulcerogenic actions of antiarthritic drugs. These and other drugs reported to react with aspirin are listed in Table 2. The warning: "Caution: Do not take this product if you are presently taking a prescription drug for anticoagulation (thinning of the blood), diabetes, gout or arthritis, except under the advice and supervision of a doctor" has been suggested.

Aspirin and Reyes Syndrome. While aspirin is safe for self-medication when used correctly, there has been controversy about whether it causes or worsens Reyes syndrome. This is a rare, rapidly developing illness that occurs in children aged 1 to 16. Early symptoms are mild, consisting of fever, upper respiratory tract infections, sore throat, cough, runny nose, diarrhea and abdominal pain. These may persist for a week to 10 days.

A second period is characterized as the "encephalitic" phase. It begins with severe, protracted vomiting that lasts from hours to a few days. The affected child may then undergo mental changes, such as listlessness, lethargy, disorientation, and occasionally, hostility when spoken to or touched. The child may appear combative, be unable to recognize family members, and advance to making constant moaning or similar sounds, muscle twitching or jerking. Consciousness deteriorates, and within a few hours, the child may be convulsing or comatose. The following label must be placed on OTC aspirin-containing products: "Warning: Children and teenagers should not use this medicine for chicken pox or flu symptoms before a doctor is consulted about Reye's syndrome, a rare but serious illness reported to be associated with aspirin."

Aspirin Poisoning

Over half of all poisonings with aspirin occur in children under the age of five. Adult toxicity generally results from chronic ingestion of large doses prescribed to treat rheumatic diseases. The majority of poisonings in children, on the other hand, are due to administration of a relatively small number of doses, given by a well-meaning parent to treat minor aches, pains and fever, or the common cold. Children present the greatest risk of serious toxicity following poisonings.

Table 3

Comparison of Serum Salicylate Levels with Adverse or Toxic Effects

SALICYLATE CONCENTRATION (mg/100 mL)	EFFECT
20	Tinnitus, decreased hearing
25	Hepatotoxicity (liver function tests abnormal)
	Decreased renal function
30	Decreased prothrombin time
31	Hearing loss
35	Hyperventilation
>40	Metabolic acidosis

The problem is potentiated with fever and/or dehydration. Quite often he has a cold and is not drinking adequate fluids. A parent then gives a dose of aspirin, followed by another and another. Within several days of continuous therapy, the child's tissues become saturated with drug. At this point, serum aspirin levels increase geometrically. Before it can be realized and the aspirin discontinued, the child has been poisoned.

Another major problem occurs when a parent refers to aspirin as "candy." Later, often unattended, the "candy" becomes too much for the child to resist, and into the mouth it goes!

Mechanisms of Action. The pathophysiology of serious toxicity is explained by central stimulation with eventual uncoupling of oxidative phosphorylation within the electron transport system. Acidosis contributes to overall toxicity. Table 3 correlates serum salicylate levels with adverse effects.

Treatment of Aspirin Poisoning. Treatment of aspirin poisoning requires emergency measures. The immediate measure is to induce emesis with ipecac syrup (after being directed to do so by a phycisian or poison control center) and transfer the victim to an emergency facility. Activated charcoal may be administered alternatively.

After the victim arrives at the hospital, sodium bicarbonate will be given intravenously to treat acidosis. High fever can be reduced by cold or tepid water sponging.

Consumer Advice for Aspirin Overdosage. It cannot be assumed that label directions for aspirin products are clear to all consumers. Each purchaser should understand all appropriate warning statements and know what to do in case children get into a package of the drug.

Whenever there is suspected aspirin overdosage, it should be treated as a potential emergency. If a parent suspects that poisoning has occurred, even though there are no overt symptoms, the child should be taken to a medical facility at once.

Pharmacists' Role in Meeting Special Needs of Older Patients

The future success of today's pharmacy will depend, in large measure, on the pharmacist's success in courting, winning and keeping the patronage of older patients, according to a new, independent nationwide survey commissioned by Schering Laboratories.

"This conclusion is based on three very simple but highly significant facts," said Dr. Jack Robbins, director of pharmacy affairs for Schering Laboratories. "First, older patients will continue to grow in both actual numbers and as a percentage of the adult population. Second, a higher proportion of seniors take prescription medications than any other age group. Third, older patients, individually, take more prescription medications than any other age group.

"The significance of the data is underscored by the fact that people aged 60 and over, while representing only some 20 percent of the adult population, account for over 40 percent of all expenditures on prescription drugs," he added.

Emphasizing the importance of older patients to the future prosperity of the profession of pharmacy, Robbins noted that the average American of all ages fills 6.5 prescriptions per year. The rate rises to 10.5 for people 60 to 69, and to 13 prescriptions per year for patients over 70.

Schering Report XII, "The Older Patient and Pharmacy: Special Needs and Special Opportunities," was based on personal in-home interviews with some 2,000 adults across the country. The study set out to answer three primary questions: How do the pharmacy needs of seniors differ from others? Are pharmacists aware of older patients' unique needs? How can pharmacists serve their senior patients better?

The study strongly suggests that seniors place great emphasis on interpersonal relationships with pharmacists and look for a courteous, friendly and caring person across the counter. Are pharmacists aware of seniors' expectations? Probably not as much as they should be, according to the study. An obvious first step toward serving seniors better, the study observes, is for pharmacists to view the senior patient as, just that, a *patient* and not simply a customer.

The Schering Report dealt with a number of potential misconceptions: the first, that all seniors are economically needy and don't have any money to spend in the pharmacy. "Perhaps this was true some years ago, but not today," Robbins said. "With Social Security increasing annually and Medicare and other insurance resources, most seniors have the means, and certainly the will, to pay for proper health care—especially prescription medicines.

"Furthermore, a recent consumer study shows that older patients spend 50 percent more per capita on non-prescription medicines than younger people, thus providing pharmacists with another opportunity to increase overall sales," he observed.

A second misconception is that seniors are just like everybody else physically, suggesting that any special concessions to them might be seen as patronizing and possibly offensive.

"The truth is that older patients do not have the same physical capacities as younger people," Robbins said. "They are the first to admit it. Some of these physical limitations can directly affect the pharmacist-patient relationship.

"The U.S. Census Bureau reports that almost 60 percent of people 65 years and older, who are not in institutions, are functionally limited in some way," he added. "For example, 22 percent have difficulty reading ordinary newsprint. Imagine their problem reading the small labels on prescription containers."

Robbins continued: "Fifteen percent have trouble hearing normal conversation. Imagine how desperately they want to understand the pharmacist's dosage instructions. Another 35 percent have difficulty in walking a quarter of a mile. This factor bears on how conveniently a pharmacy is located, the size of the parking lot, and even the size of the store itself."

A third misconception says that older people have lost much of their capacities, both physically and mentally, and are best treated as very old children. While age admittedly brings infirmities, it also brings wisdom and dignity. Older patients want respectful, not necessarily preferential, treatment, the study indicated. "Even if they don't walk as well as they used to, they'll find a way to get to a competitor's pharmacy if they feel they are not being treated with respect," he added.

Schering Report XII reveals that one in four older patients is taking medications prescribed by two or more doctors. Robbins noted that this sends up warning flags for pharmacists on possible harmful drug interactions in cases where one doctor is not aware of medications prescribed by another.

Who wrote the prescriptions? A full two-thirds (66 percent) were written by the family doctor, a general practitioner. This was clearly a surprise, the study noted, since the seriousness of the seniors' ailments might have led to an assumption that specialists were the principal prescribers. Of the remaining prescriptions, internists accounted for 21 percent and cardiologists 13 percent.

With the prescription in hand, do seniors fill the prescription, and do they take the medication as directed?

"Two out of 10 seniors admit to occasionally deciding not to have the prescription filled," Robbins said. "That's too many, but not as many as the younger patients, where the rate rises to three in 10. Seniors gave three reasons most often for not filling prescriptions: the medication was not needed because the condition improved (30 percent); the medication would not have helped (17 percent); and the cost of filling the prescription was a factor (11 percent).

"One-third of seniors admitted they 'sometimes' decided to stop taking the medication," Robbins noted. "Again, that's too many, but better than younger patients (43 percent) who discontinued their medicines prematurely.

"Regardless of age, the 'condition improved' was the number one reason for stopping the medication. The number two reason was side effects, which was cited somewhat more frequently by older than younger people," he added.

As people get older and contend with more health problems and more medications, the pharmacy plays an increasingly important role in their lives, the Schering Report observed.

How loyal are seniors to their regular pharmacy? Eighty-six percent of older patients reported that they use only one pharmacy, demonstrating a very high degree of loyalty. The loyalty factor for those under 60 was slightly lower (78 percent).

While operators of all types of pharmacies hope that customers who come in for prescriptions will also purchase some other goods and services—non-prescription (OTC) drugs, cosmetics, toiletries, greeting cards and gifts—chains have a better chance of making such a sale to seniors than do independents. For example, 60 percent of seniors who recalled shopping in an independent pharmacy in the previous six months purchased non-prescription medicines there, while 76 percent who shopped in chains made similar purchases.

"The contrast is even greater for cosmetics and toiletries," Robbins said. "Only 30 percent of people shopping in independent pharmacies, compared with 60 percent of chain shoppers, made a purchase. Similarly, while only 33 percent of seniors who shopped at independent pharmacies picked up cards or gifts, almost twice as many (57 percent) of those patronizing a chain did so."

The comparatively lower rate of OTC purchases at independents should alert independent pharmacy operators to consider what they should be doing to re-establish their traditional role in making OTC recommendations and merchandising the "front end" of their pharmacies, the study noted.

Does the doctor who writes the prescription also suggest where to have it filled? According to the Schering Report, the answer, nine times out of 10, is no. Only 8 percent of those over 60 and 12 percent of those under 60 recalled a doctor ever suggesting a specific pharmacy. In those few cases where the doctor did, however, nine out of 10 followed their doctor's advice.

The Schering Report also asked seniors how they go about choosing their "regular" pharmacy and examined the degree to which their decision-making process resembles or differs from the younger population.

Continued on page 14. . . .

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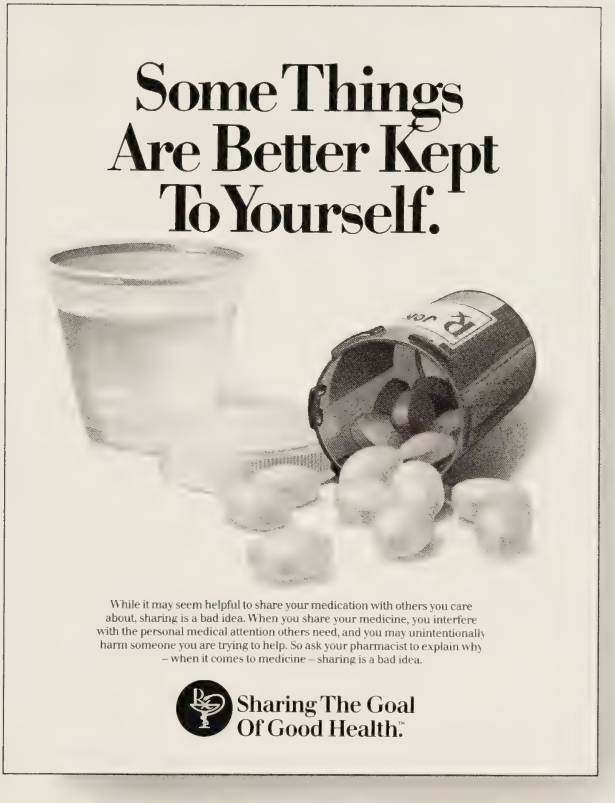

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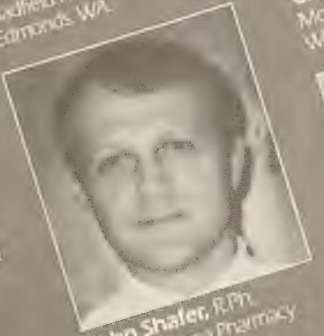

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Morristown, TN

Continued from page 10.

Of 19 factors, five were most commonly cited. Older people look mainly for: convenient location (37 percent); prompt service (34 percent); and a friendly and courteous pharmacist (33 percent)—all in a virtual photo finish for the lead. Close behind were "fair prices" for prescriptions (27 percent) and a pharmacy where the pharmacist provides information without being asked (25 percent).

"The surprise here may be that prices did not overshadow the other factors," Robbins noted. "Pharmacists occasionally hear patients grumbling about prices, but price does not appear to be an overriding factor in selecting a pharmacy."

The study acknowledged that pharmacists are limited in their ability to do very much about the price or the convenient-location factor. It stressed, however, that some things are within the pharmacist's control—things like providing friendly, courteous and prompt service, and offering some unsolicited but much appreciated information about the prescribed medication.

To what degree are the priorities of seniors in choosing a pharmacy different from those of everybody else? The same five factors top the priority lists of those under 60, but some subtle differences emerged.

"Both age groups give convenient location and fair prices almost identical weight," Robbins said. "But two factors—prompt service and friendly and courteous service—were somewhat more important to seniors than those under 60.

"The surprising finding was that 5 percent more of the younger patients stressed the importance of finding a pharmacist who will tell them about their prescription—even if they don't ask," he added. "Why? Possibly because younger patients lack the long history of taking medications and, therefore, feel relatively insecure in this new activity.

"Whether junior or senior, whether shopping at an independent pharmacy or chain pharmacy, patients share one thing in common," Robbins observed. "They *know* what they want from a pharmacy. But the question remains, do they *get* what they want?"

The study showed that those patronizing independent pharmacists were more than twice as likely as those patronizing chains to "strongly agree" with the statement, "The pharmacist knows me and my family" (58 percent versus 22 percent).

"Patrons of independent pharmacists also agree that their pharmacist has a host of other inestimable personal characteristics, usually found only in Eagle Scouts," he said. "These include being caring, friendly and courteous; lending an ear when advice is needed; being alert to errors; and being prompt.

"While all these traits are noted less often by those who patronize chains, seniors loyal to chains give them higher marks on fair prices—for both prescription and non-prescription medications—and for a variety of other merchandise, such as gifts and cosmetics," he added.

Asked whether an independent or a chain pharmacist is more knowledgeable about prescription medicines, seniors cited an indepedent by more than 2-to-1 (30 percent versus 13 percent), with the under-60 group essentially concurring (24 percent versus 15 percent).

On a parallel track, 43 percent of older patients strongly agreed that independent pharmacists are more willing to speak to them personally and give advice. This contrasted with only 10 percent of seniors who strongly agreed that chain pharmacists are willing to speak to them. The 4-to-1 ratio favoring independent pharmacists prevailed as well among the younger group.

Acknowledging that choosing a regular pharmacist is a very personal decision, the interviewers then asked seniors to tell, in their own words, what they liked best—and what annoyed them most—about their pharmacist.

Topping the seniors' "like-most" list is friendly/caring/helpful personnel (37 percent). "He's on call all the time, he even said to call him at home," a Kansas woman said about her independent pharmacist. A retired woman in Florida commented, "He is always courteous and never forgets to give me my senior citizens discount." Others said, "He's courteous, friendly and nice, and real accommodating. . . . Always asks about family members. . . . He makes sure I get my prescription medicine, 'loaning' me part of the prescription—just a few pills, you know—until I can afford it."

The second most popular factor in choosing a pharmacy is prompt service (25 percent), the study revealed. When ailing, seniors understandably are anxious to get home as quickly as possible. Number three on the "like" list is convenient location (21 percent). Since most people usually have a choice among a number of equally accessible locations, other factors weigh more heavily in the final decision.

Mentioned almost as frequently as location is the comment, "The pharmacist takes time to answer my question" (18 percent). "He's old fashioned in that he takes the time to help each person," a New England woman explained.

On the "what-annoys-me" list, a majority (60 percent) of seniors, but only 40 percent of the under-60 group, said, "Not a darn thing, no complaints." The main complaints about pharmacies concerned slow service, waiting in lines and waiting for prescriptions. People under 60 complained of this more than older patients (27 percent versus 17 percent.)

Other typical complaints: "I rarely get to see the pharmacist. . . . I have to leave the prescription with a clerk, and get the medicine from a clerk. . . . They run out of medicine and you have to wait for it to be ordered. . . . I live in a small town and some of the help outside the store talk about my ailments with other people in town."

Asked to suggest ways that pharmacists can improve their service, few people could think of areas that needed improvement. "to put all that sunshine in perspective," Robbins observed, "remember, they're talking about their current pharmacy, not the one they may have left because of unacceptable treatment."

Among suggestions for improvement, lowering prices was mentioned by only 14 percent, indicating that price does not seem to be a serious grievance. Twenty-two percent of younger patrons, compared to 9 percent of older patrons, suggested that service be speeded up. Finally, 14 percent of younger and 9 percent of older patients called for pharmacists to become more accommodating and more informative.

Among the verbatim comments and grass-roots suggestions: "Pharmacists should listen more. . . . People aren't as dumb as pharmacists may think. . . . Pharmacists should come out to talk to you personally. . . . They should be more available. . . . They should provide more information about the side effects. . . . Pharmacies should have seats for people who are waiting for prescriptions. . . . If there's a senior citizens discount, pharmacies should publicize it."

Robbins said: "Recognizing that people want a direct and open line of communications with pharmacists, we put this connection to the test by asking older patients who they would talk to first if they had a question about a prescription medicine. If that person were not available, who was their second choice."

The first choice, not unexpectedly, was the doctor who wrote the prescription (70 percent), the study reported. The clear second choice was the pharmacist (55 percent). In all, nine out of 10 patients listed the pharmacist as their first or second choice.

The study also identified two other services that many seniors just didn't know were available to them—senior citizens discounts and direct insurance company billing, both of special interest to seniors. While 59 percent were aware that their regular pharmacy did offer senior discounts, 18 percent said their regular pharmacy did not provide that service. A surprising 23 percent were not sure either way.

On another key issue, the Schering Report found that patrons of independent pharmacies appear to get more information on prescription medications than those who shop in chain pharmacies. Particularly noteworthy is the comparison with respect to side effects. Older patients who patronize independent pharmacies (39 percent) said they are always told about possible side effects, compared with 25 percent of seniors who patronize chains.

"It would seem obvious that greater conscientiousness in offering information and advice on medications—a service that many patients rate as critical—would significantly help increase the rate of patient compliance," Robbins said.

Pharmacists sometimes provide additional advice in the form of printed instructions, but not very often, the study showed. Only 37 percent of seniors recalled their independent pharmacist ever giving them printed information, other than

Continued on page 17. . . .

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Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:
- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Hypersensitivity reactions have been reported in about 1.5% of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of **serum-sickness-like** reactions have been reported with the use of Ceclor. These are characterized by findings of erythema multiforme, rashes, and other skin manifestations accompanied by arthritis/arthralgia, with or without fever, and differ from classic serum sickness in that there is infrequently associated lymphadenopathy and proteinuria, no circulating immune complexes, and no evidence to date of sequelae of the reaction. While further investigation is ongoing, **serum-sickness-like** reactions appear to be due to hypersensitivity and more often occur during or following a second (or subsequent) course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults with an overall occurrence ranging from 1 in 200 (0.5%) in one focused trial to 2 in 8,346 (0.024%) in overall clinical trials (with an incidence in children in clinical trials of 0.055%) to 1 in 38,000 (0.003%) in spontaneous event reports. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy; occasionally these reactions have resulted in hospitalization, usually of short duration (median hospitalization = two to three days, based on postmarketing surveillance studies). In those requiring hospitalization, the symptoms have ranged from mild to severe at the time of admission with more of the severe reactions occurring in children. Antihistamines and glucocorticoids appear to enhance resolution of the signs and symptoms. No serious sequelae have been reported.
- Stevens-Johnson syndrome, toxic epidermal necrolysis, and anaphylaxis have been reported rarely. Anaphylaxis may be more common in patients with a history of penicillin allergy.
- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1% and, rarely, thrombocytopenia and reversible interstitial nephritis.

Abnormalities in laboratory results of uncertain etiology.
- Slight elevations in hepatic enzymes.
- Transient lymphocytosis, leukopenia, and, rarely, hemolytic anemia and reversible neutropenia.
- Rare reports of increased prothrombin time with or without clinical bleeding in patients receiving Ceclor and Coumadin concomitantly.
- Abnormal urinalysis; elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

PA 8791 AMP [021490LRI]

Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

Lilly

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A Primary Source for Acid-Pump Inhibition...

For Many Patients with Severe Erosive Esophagitis or Poorly Responsive Symptomatic GERD

Please see Brief Summary of Prescribing Information, including the Boxed WARNING, on the last page of this advertisement.

...Is Still Omeprazole, MSD

Before prescribing or dispensing PRILOSEC™ (Omeprazole, MSD), please review the Boxed WARNING contained in the Brief Summary of Prescribing Information on the last page of this advertisement. Accordingly, PRILOSEC should be used only for the conditions, dosages, and duration specified in the Prescribing Information.

PRILOSEC™ and LOSEC®, products of Astra/Merck research, are trademarks of AB Astra.
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Only the Name Has Changed

(prī′ lō sĕc)

PRILOSEC Is the New Brand Name for Omeprazole, MSD

On October 1, 1990, the brand name for Omeprazole, MSD was changed from LOSEC to PRILOSEC. Merck Sharp & Dohme has taken this action to address the potential for confusion between the brand names LOSEC and Lasix** (furosemide).

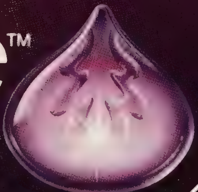
PRILOSEC is indicated for the short-term treatment (4 to 8 weeks) of patients with:

- Symptomatic gastroesophageal reflux disease (GERD/esophagitis) poorly responsive to customary treatment, usually including an adequate course of H_2 antagonist therapy
- Severe erosive esophagitis (grade 2 or above) diagnosed by endoscopy

For Acid Control Beyond H_2 Blockade, a Primary Source Is Still Omeprazole, MSD—Just Remember the New Name: PRILOSEC

For severe erosive esophagitis or poorly responsive symptomatic GERD

PRiLOSEC™
(OMEPRAZOLE | MSD)



Pain Relief and Healing Beyond H_2 Blockade

*Formerly 'LOSEC®'

PRiLOSEC™
(OMEPRAZOLE/MSD)

(Formerly 'LOSEC®')

PRILOSEC™ and LOSEC®, products of Astra/Merck research, are trademarks of AB Astra.

CLINICAL PHARMACOLOGY

Mechanism of Action: Omeprazole belongs to a new class of antisecretory compounds, the substituted benzimidazoles, that do not exhibit anticholinergic or H_2-histamine antagonistic properties but that suppress gastric acid secretion by specific inhibition of the H^+/K^+ ATPase enzyme system at the secretory surface of the gastric parietal cell. Because this enzyme system is regarded as the acid (proton) pump within the gastric mucosa, omeprazole has been characterized as a gastric acid pump inhibitor, in that it blocks the final step of acid production. This effect is dose-related and leads to inhibition of both basal and stimulated acid secretion, irrespective of the stimulus. Animal studies indicate that after rapid disappearance from plasma, omeprazole can be found within the gastric mucosa for a day or more.

Antisecretory Activity: After oral administration, the onset of the antisecretory effect of omeprazole occurs within one hour, with the maximum effect occurring within 2 hours. Inhibition of secretion is about 50% of maximum at 24 hours, and the duration of inhibition lasts up to 72 hours. The antisecretory effect thus lasts far longer than would be expected from the very short (less than one hour) plasma half-life, apparently due to prolonged binding to the parietal H^+/K^+ ATPase enzyme. When the drug is discontinued, secretory activity returns gradually, over 3 to 5 days. The inhibitory effect of omeprazole on acid secretion increases with repeated once-daily dosing, reaching a plateau after 4 days.

INDICATIONS AND USAGE

Gastroesophageal Reflux Disease (GERD): Severe Erosive Esophagitis: PRILOSEC™ (Omeprazole, MSD) Delayed-Release Capsules are indicated for the short-term treatment (4-8 weeks) of severe erosive esophagitis (grade 2 or above) which has been diagnosed by endoscopy.

Poorly Responsive Symptomatic GERD: PRILOSEC Delayed-Release Capsules are indicated for the short-term treatment (4-8 weeks) of symptomatic gastroesophageal reflux disease (esophagitis) poorly responsive to customary medical treatment, usually including an adequate course of a histamine H_2-receptor antagonist.

The efficacy of PRILOSEC used for longer than 8 weeks in these patients has not been established. In the rare instance of a patient not responding to 8 weeks of treatment, it may be helpful to give up to an additional 4 weeks of treatment. If there is recurrence of severe or symptomatic GERD poorly responsive to customary medical treatment, additional 4-8 week courses of omeprazole may be considered. THE DRUG SHOULD NOT BE USED AS MAINTENANCE THERAPY (see Boxed WARNING).

Pathological Hypersecretory Conditions: PRILOSEC Delayed-Release Capsules are indicated for the long-term treatment of pathological hypersecretory conditions (e.g., Zollinger-Ellison syndrome, multiple endocrine adenomas, and systemic mastocytosis).

CONTRAINDICATIONS

PRILOSEC Delayed-Release Capsules are contraindicated in patients with known hypersensitivity to any component of the formulation.

WARNING

In long-term (2 year) studies in rats, omeprazole produced a dose-related increase in gastric carcinoid tumors (see PRECAUTIONS, *Carcinogenesis, Mutagenesis, Impairment of Fertility*). While available endoscopic evaluations and histologic examinations of biopsy specimens from human stomachs have not detected a risk from short-term exposure to PRILOSEC, further human data on the effect of sustained hypochlorhydria and hypergastrinemia are needed to rule out the possibility of an increased risk for the development of tumors in humans receiving long-term therapy with PRILOSEC. PRILOSEC should be prescribed only for the conditions, dosage, and duration described (see INDICATIONS AND USAGE and DOSAGE AND ADMINISTRATION).

PRILOSEC™
(OMEPRAZOLE/MSD)
20mg
Once Daily

PRECAUTIONS

General: Symptomatic response to therapy with omeprazole does not preclude the presence of gastric malignancy.

Information for Patients: PRILOSEC™ (Omeprazole, MSD) Delayed-Release Capsules should be taken before eating. Patients should be cautioned that the PRILOSEC Delayed-Release Capsules should not be opened, chewed, or crushed and should be swallowed whole.

Drug Interactions: Omeprazole can prolong the elimination of diazepam, warfarin, and phenytoin, drugs that are metabolized by oxidation in the liver. Patients should be monitored to determine if it is necessary to adjust the dosage of these drugs when taken concomitantly with PRILOSEC. In clinical trials, antacids were used concomitantly with administration of PRILOSEC.

Carcinogenesis, Mutagenesis, Impairment of Fertility: In two 24-month carcinogenicity studies in rats, omeprazole at daily doses of 1.7, 3.4, 13.8, 44.0, and 140.8 mg/kg/day (approximately 4 to 352 times the human dose, based on a patient weight of 50 kg and a human dose of 20 mg) produced gastric ECL cell carcinoids in a dose-related manner in both male and female rats; the incidence of this effect was markedly higher in female rats, which had higher blood levels of omeprazole. Gastric carcinoids seldom occur in the untreated rat. In addition, ECL cell hyperplasia was present in all treated groups of both sexes. In one of these studies, female rats were treated with 13.8 mg/kg/day omeprazole (approximately 35 times the human dose) for one year, then followed for an additional year without the drug. No carcinoids were seen in these rats. An increased incidence of treatment-related ECL cell hyperplasia was observed at the end of one year (94% treated vs 10% control). By the second year, the difference between treated and control rats was much smaller (46% vs 26%) but still showed more hyperplasia in the treated group. A 78-week mouse carcinogenicity study of omeprazole did not show increased tumor occurrence, but the study was not conclusive.

Omeprazole was not mutagenic in an *in vitro* Ames *Salmonella typhimurium* assay, an *in vitro* mouse lymphoma cell assay, and an *in vivo* rat liver DNA damage assay. A mouse micronucleus test at 625 and 6250 times the human dose gave a borderline result, as did an *in vivo* bone marrow chromosome aberration test. A second mouse micronucleus study at 2000 times the human dose but with different (suboptimal) sampling times was negative.

In a rat fertility and general reproductive performance test, omeprazole in a dose range of 13.8 to 138.0 mg/kg/day (approximately 35 to 345 times the human dose) was not toxic or deleterious to the reproductive performance of parental animals.

Pregnancy: Pregnancy Category C: There are no adequate or well-controlled studies in pregnant women. Omeprazole should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether omeprazole is excreted in human milk. In rats, omeprazole administration during late gestation and lactation at doses of 13.8 to 138 mg/kg/day (35 to 345 times the human dose) resulted in decreased weight gain in pups. Because many drugs are excreted in human milk, because of the potential for serious adverse reactions in nursing infants from omeprazole, and because of the potential for tumorigenicity shown for omeprazole in rat carcinogenicity studies, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

In the U.S. clinical trial population of 465 patients (including duodenal ulcer, Zollinger-Ellison syndrome, and resistant ulcer patients), the following adverse experiences were reported to occur in 1% or more of patients on therapy with PRILOSEC™ (Omeprazole, MSD). Numbers in parentheses indicate percentages of the adverse experiences considered by investigators as possibly, probably, or definitely related to the drug.

	Omeprazole (n=465)	Placebo (n=64)	Ranitidine (n=195)
Headache	6.9 (2.4)	6.3	7.7 (2.6)
Diarrhea	3.0 (1.9)	3.1 (1.6)	2.1 (0.5)
Abdominal Pain	2.4 (0.4)	3.1	2.1
Nausea	2.2 (0.9)	3.1	4.1 (0.5)
URI	1.9	1.6	2.6
Dizziness	1.5 (0.6)	0.0	2.6 (1.0)
Vomiting	1.5 (0.4)	4.7	1.5 (0.5)
Rash	1.5 (1.1)	0.0	0.0
Constipation	1.1 (0.9)	0.0	0.0
Cough	1.1	0.0	1.5
Asthenia	1.1 (0.2)	1.6 (1.6)	1.5 (1.0)
Back Pain	1.1	0.0	0.5

Additional adverse experiences occurring in <1% of patients or subjects in domestic and/or international trials are shown below, listed by body system. In many instances, the relationship to PRILOSEC was unclear. *Body as a Whole:* Fever, pain, fatigue, malaise, abdominal swelling. *Cardiovascular:* Chest pain or angina, tachycardia, bradycardia, palpitation, peripheral edema. *Digestive:* Elevated ALT (SGPT), elevated AST (SGOT), elevated γ-glutamyl transpeptidase, elevated alkaline phosphatase, elevated bilirubin (jaundice), anorexia, irritable colon, flatulence, fecal discoloration, esophageal candidiasis, mucosal atrophy of the tongue, dry mouth. *Metabolic/Nutritional:* Hypoglycemia, weight gain. *Musculoskeletal:* Muscle cramps, myalgia, joint pain, leg pain. *Nervous System/Psychiatric:* Dizziness, vertigo, insomnia, nervousness, apathy, somnolence, anxiety disorders, paresthesia, dream abnormalities, hemifacial dysesthesia. *Respiratory:* Epistaxis, pharyngeal pain. *Skin:* Rash, skin inflammation, urticaria, pruritus, alopecia, dry skin, hyperhidrosis. *Special Senses:* Tinnitus, taste perversion. *Urogenital:* Urinary tract infection, microscopic pyuria, urinary frequency, elevated serum creatinine, proteinuria, glycosuria, hematuria, testicular pain. *Hematologic:* Agranulocytosis, pancytopenia, thrombocytopenia, neutropenia, anemia, leucocytosis.

The incidence of clinical adverse experiences in patients >65 years of age was similar to that in patients ≤65 years.

OVERDOSAGE

There is no experience to date with deliberate overdosage. Dosages of up to 360 mg/day have been well tolerated. No specific antidote is known. Omeprazole is extensively protein bound and is, therefore, not readily dialyzable. In the event of overdosage, treatment should be symptomatic and supportive.

DOSAGE AND ADMINISTRATION

Severe Erosive Esophagitis or Poorly Responsive Gastroesophageal Reflux Disease (GERD): The recommended adult oral dose is 20 mg daily for 4 to 8 weeks (see INDICATIONS AND USAGE).

Pathological Hypersecretory Conditions: The dosage of PRILOSEC in patients with pathological hypersecretory conditions varies with the individual patient. The recommended adult oral starting dose is 60 mg once a day. Doses should be adjusted to individual patient needs and should continue for as long as clinically indicated. Doses up to 120 mg t.i.d. have been administered. Daily dosages of greater than 80 mg should be administered in divided doses.

No dosage adjustment is necessary for patients with renal impairment, hepatic dysfunction, or for the elderly.

HOW SUPPLIED

No. 3440 – PRILOSEC Delayed-Release Capsules, 20 mg, are opaque, hard gelatin, amethyst-colored capsules, coded MSD 742.

Storage: Store PRILOSEC Delayed-Release Capsules in a tight container protected from light and moisture. Store between 59° F and 86° F (15° C and 30° C).

For more detailed information, consult your MSD Representative or see Prescribing Information.

MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
WEST POINT, PA 19486

Jointly manufactured by:

MSD
MERCK SHARP & DOHME

Merck Sharp & Dohme
Division of Merck & Co., Inc.
West Point, PA 19486
and
AB Astra Södertälje, Sweden

Copyright © 1990 by Merck & Co., Inc. J0LS23(400) that on the prescription container. Moreover, that percentage drops to 25 percent in the case of chain pharmacies.

Noting that the risk of drug interactions will continue to grow as more people live linger and require more medications, the study measured the extent of individaul medication monitoring. Seven out of 10 seniors said their pharmacist maintains a record of all their medications. "Obviously, a computerized system is a potential ally here," he added. Among those who did not know if their pharmacist maintained their records, seven out of 10 (68 percent) agreed that it was a good idea if they did. In addition, 45 percent of seniors said they keep their own records.

Given complaints about waiting for prescriptions, the study anticipated that seniors would be receptive to bypassing their local pharmacy in favor of mail order. However, of the older patients interviewed, only 13 percent had ever used mail order and, among the younger patients, only 5 percent had used mail order. For some reason, the study reported, men had used mail order more often than women (17 percent versus 10 percent).

"Most of the people we spoke to, regardless of age, showed no interest in mail order pharmacy," Robbins added. Among those who had tried mail order, about nine out of 10 resisted the idea strongly: "Much too slow. . . . The mail is undependable. . . . It's too inconvenient. . . . Would regret the loss of personal contact with the pharmacist."

Schering Report XII emphasized that older patients have special needs and place great emphasis on their interpersonal relationship with the pharmacist.

"To better serve this audience, pharmacists should start by reaffirming their perception of senior patients as, what they really are, *patients* and not just customers," Robbins said. "They should review their practices and, where needed, retrain themselves and their staffs to treat each patient with consideration, courtesy and friendliness. Besides, that's just good business—whether it's a pharmacy or a stationery store."

Local Pharmacist Receives Award

Nathaniel Futeral, P.D., President, Maryland Pharmacists Association, 650 West Lombard Street, Baltimore, Maryland, has been named a recipient of the MSD Pharmacist Achievement Award. He is a resident of Baltimore.

The award was established by Merck Sharp & Dohme (MSD), the U.S. prescription drug division of Merck & Co., to recognize professional and civic achievements of pharmacists. Futeral was cited for his service as President of the Maryland Pharmacists Association and to the community of Baltimore.

The award was presented by Frank X. Radigan of Merck Sharp & Dohme.

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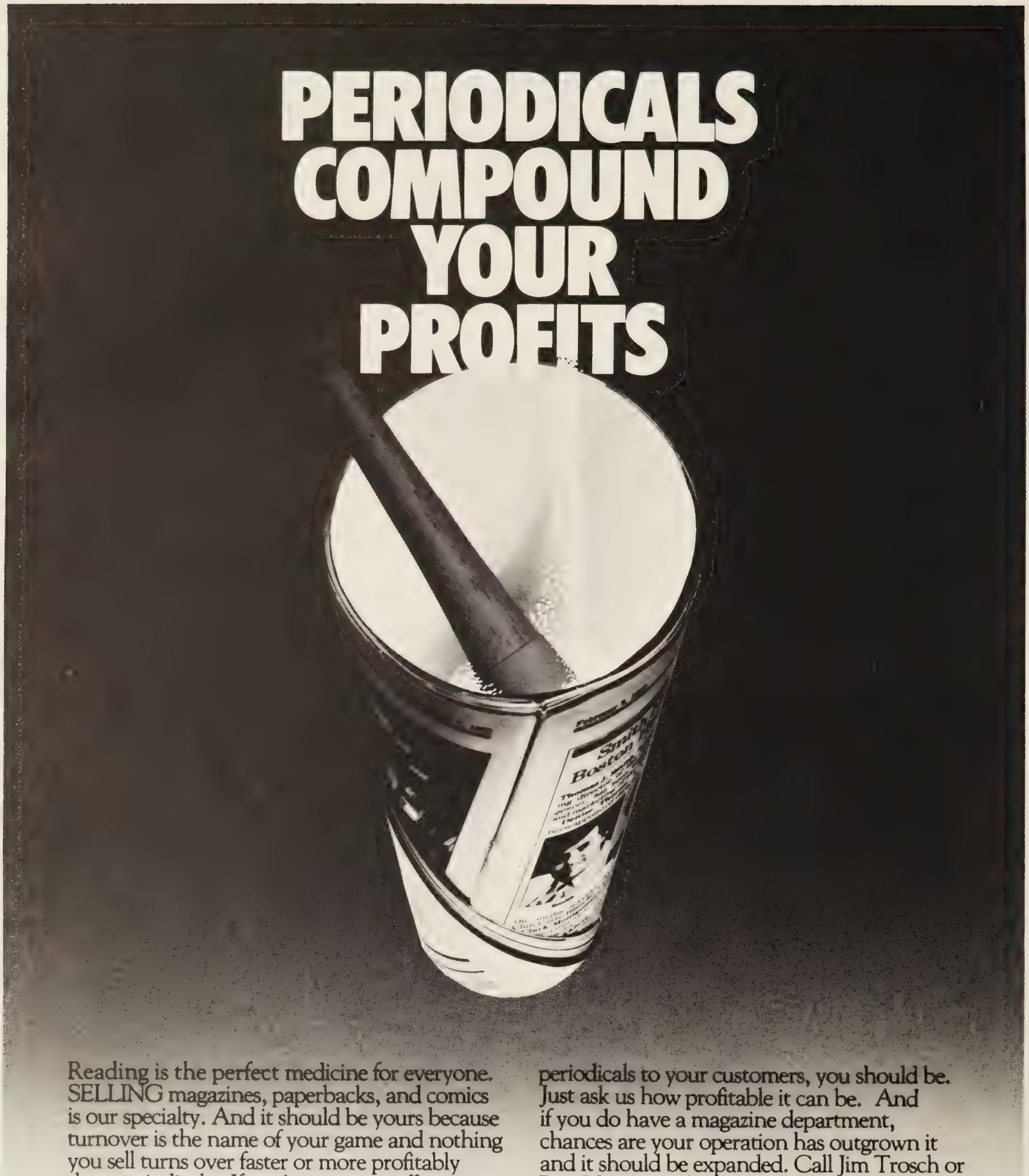

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Counseling: Pharmacy's Responsibility

Probably one of the biggest debates that has tied up pharmacy is whether or not the profession should accept responsibility for making sure that our patients take their medications properly. Some pharmacists believe that patient counseling should be a legislated requirement. Others believe that counseling is a professional obligation subject to the assessment of the pharmacist. And, unfortunately, some pharmacists still believe that drug information and the monitoring of proper drug use should best be left to physicians.

Disturbingly, a number of Maryland pharmacists hold this last position. MPhA's drug utilization review program frequently receives responses from pharmacists like: ''I can't do anything about this patient's problem, write to the doctor,'' or worse, ''It's the doctor's problem, don't bother me.'' Well, you can do something and it is your problem, too.

There are many arguments for both sides of the counseling and pharmacist intervention issue. However, I believe the debate has gone on long enough. Pharmacy as a profession must stand up and declare that we are the health professionals who will take responsibility for making sure that each of our patients receive the right medicine at the right time and use it the right way. If we fail to take this stand, some other profession will quickly step in and declare themselves the ''drug experts.''

Pharmacy frequently waits until it's too late to act. We have accepted the encroachment of mail-order pharmacies, physician dispensing, punitive reimbursement, and much more. Sure, we have fought against these issues—but when was the last time that the profession as a whole, pharmacists in *every* practice site, took a strong united stance against them. Patient counseling and the responsibility that goes with that counseling presents the opportunity to stand up and say THIS BELONGS TO PHARMACY AND PHARMACISTS.

Mark A. Levi, P.D.

MPhA President

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Form and File: All articles should be typewritten and double-spaced on one side of 8½ × 11 paper with one and one-half inch margins. References: References must accompany the article and be numbered consecutively in order of appearance. Photographs: photographs, drawings, etc., should be mailed flat and protected from bending. Figures and tables should be typed and double-spaced on a separate sheet of paper and be referred to in the text of the article. Reprints: Upon request, 5 complimentary journals will be given to the author. The request must be made by the 5th of the month preceding the month of publication. If more are required, a quotation will be given.

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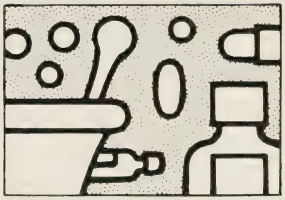
Things You Should Know FOR YOUR GOOD HEALTH



Atherosclerosis and Diabetes

Atherosclerosis, the patchy disease of arteries (blood vessels that carry blood from the heart), alters and thickens their walls and narrows their lumens. As a consequence, the arteries have a reduced blood-carrying capacity. Atherosclerosis primarily affects arteries of large to medium size. These vessels vary in size from an inch or more in diameter to 1/16 inch or less, which is the caliber found toward the end of coronary arteries. Smaller arteries are less altered by atherosclerosis and will not be discussed here.

The most important organs affected by atherosclerosis are (1) the heart (coronary artery narrowing can lead to angina pectoris and heart attack), (2) the brain (involvement of arteries to the brain can lead to strokes, ranging from minor transient episodes to major paralytic attacks and death), (3) the kidneys (resulting in declining kidney function and often high blood pressure), (4) the aorta (progressive atherosclerotic disease produces an inelastic wall that may dilate and bulge to form an aneurysm), (5) the peripheral arteries, especially atherosclerosis of the lower extremity arteries (may lead to intermittent claudication—pain in the leg with walking—and possible tissue death) and (6) the intestinal arteries (may cause abdominal pain, bowel dysfunction and intestinal gangrene).

All of us are subject to these blood vessel diseases, but those with diabetes are especially so; diabetics suffer an estimated overall increased frequency of 2½ to 4 times above non-diabetic occurrence. Strokes are twice as frequent in diabetics, heart attacks are 2 to 3 times more frequent (and even 10 to 11 times more frequent in younger females) and peripheral arterial problems are 5 to 10 times more common. Atherosclerosis in the diabetic is more diffuse and severe and more rapidly progressive. Seventy-five percent of diabetic deaths are due to disease of the larger and medium-sized arteries.

The risk factors for atherosclerosis are being adequately publicized. Advancing age, male gender, elevated blood cholesterol, high blood pressure, cigarette smoking, a positive family history of atherosclerotic disease and diabetes are known troublemakers. Excessively sedentary lifestyle and excessive emotional stress may also influence the development of atherosclerosis. The diabetic must be concerned about the same risk factors as every one else, plus the added risk factor of having diabetes *per se*. Why is diabetes a risk factor? The fact that 80 percent of diabetics are overweight suggests that obesity is the causative factor. On analysis, however, it turns out that it is not the obesity by itself, but other factors associated with obesity—elevated cholesterol, hypertension and elevated blood sugar—that promote atherosclerosis.

From what has been said above, one conclusion is appropriately drawn that satisfies both scientific inquiry and common sense. To best prevent atherosclerosis, the diabetic has one choice: to follow the prudent health habits recommended for all of us and to manage his or her diabetes conscientiously. A recent authoritative report stated that between 50 and 85 percent of the acute and chronic complications associated with diabetes which contribute to mortality are preventable or treatable. Much of that statement refers to the unequivocal virtues of controlling weight, following a prudent low-fat/low-cholesterol diet, being moderate in alcohol intake, exercising regularly, not smoking and controlling hypertension if present. In the totality of good health maintenance, additional individualized prescriptions by the physician (insulin, oral hypoglycemics, hypolipidemic agents, etc.) are obviously important. Certain prohibitions will be applicable to others (for example, the use of oral contraceptives and excessive salt intake). For more information, Ask Your Pharmacist.

Reprinted from Heartbeat of the Chicago Heart Association

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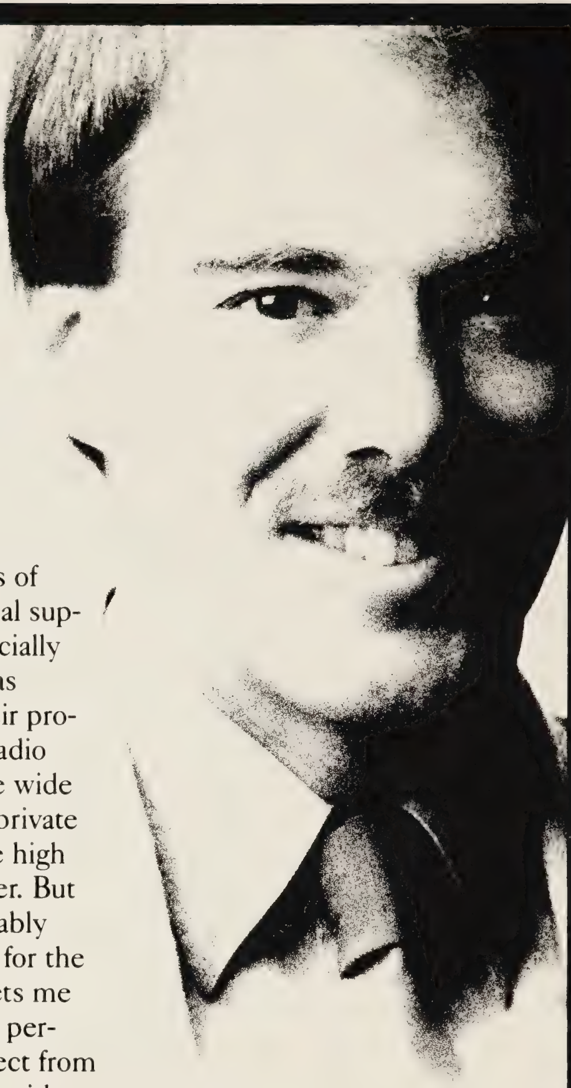


"Over 3,000 pharmacies belong to Valu-Rite. There must be a reason.

In fact, there are lots of reasons. Promotional support for example, especially now that McKesson has added cable TV to their program of circulars and radio spots. Then there's the wide selection of Valu-Rite private label products, and the high profit margins they offer. But most pharmacies probably sign on with Valu-Rite for the same reason I did: it lets me give my customers the personal service they expect from an independent, along with the low prices of a national chain. That's a combination that just can't be beat."

Scott Rickards

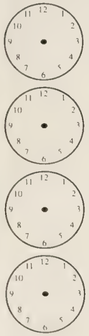
SCOTT RICKARDS
RICKSAVE DRUG
NAPLES, MAINE

McKesson

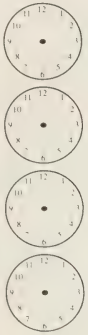
Medicine Record

To help you remember to give all your child's doses at the right times, fill in clock face with time of dose and check off each dose as you give it!

WEEK #1 MON. TUES. WED. THUR. FRI. SAT. SUN



WEEK #2 MON. TUES. WED. THUR. FRI. SAT. SUN



Name of Medicine

National Council On Patient Information and Education
666 11th Street, NW
Suite 810
Washington, DC 20001

202/347-6711

A Parent's Guide For Medicine Use by Children

Speak Up
For Children
Talk About Prescriptions

Speak Up For Children

Talk About Prescriptions

Medicines can help your children feel better and stay active. Sometimes they even save lives.

To work the way they should, medicines must be used properly. When we make mistakes in the way we give medicines, children don't get well. Some mistakes cause problems that can put your child's health -- and life -- at risk. The common mistakes that hurt children's health include:

- Stopping a medicine too soon or too suddenly.
- Not giving enough of a medicine (forgetting or skipping doses and giving them at the wrong times).
- Letting a child refuse to take a medicine (or deciding on your own not to follow the doctor's advice).
- Giving too much of a medicine (giving larger doses or giving them more often than advised).

How can you be sure that you do what's best for your child? The first step is to speak up. Talk to your health professionals, your children, and the others who take care of your children about every medicine they take.

Talk to Your Health Professionals

- Discuss the decision to begin or continue use of any medicine. Find out about non-drug approaches that may be used along with medicines.
- Ask your doctor to explain the benefits and the potential risks of medicines he or she prescribes for your child.
- Tell your doctor or pharmacist about other medicines your child is taking, including over-the-counter medicines. This can help prevent drug interactions.
- Ask doctors and pharmacists the 5 questions that appear on this brochure. Take the brochure along when you visit the doctor's office or pharmacy. Use the space provided to write down the answers.
- Never stop, or adjust, the dosage of your child's medicine without consulting the doctor.
- Monitor and report on your child's response to the medicine. If you think it is causing side effects, let the doctor know. Don't be afraid of "bothering" him or her. Doctors need feedback to give the best treatment.
- Call the doctor or pharmacist if you have other questions later on. Don't "guess" when it comes to medicines

Talk to Your Child

- Teach your children that proper use of medicines, is a key to good health, just like eating right or brushing your teeth.
- Explain the difference between legitimate medicines and illegal drugs. Use only the word "medicines" to talk about prescriptions and over-the-counter medicines. Use the term "drugs" to refer to illegal substances.
- Encourage your children to ask questions of the doctor and pharmacist about the medicines they will be taking. Show them how by your example.
- Decide together which responsibilities you and your child will have in following the treatment. A younger child might help you remember each dose; a teenager might take the lead, with you monitoring and providing back up.
- Get your child's help in solving problems that make it hard to follow treatment, such as remembering medicine in a busy schedule, taking medicines in school, and coping with side effects.

Talk to The Others Who Care For Your Children

The Other Parent. Both parents and step-parents should be involved in helping the child take medicine. Share information you get from the health professional. Explain instructions. Clarify the roles each of you will play.

Grandparents, Day Care Helpers, Babysitters. Explain the medicine schedule and treatment details to all those who give your child medicine in your absence. Follow up to be sure your instructions were carried out.

Schools and Teachers. Tell school personnel if your child is taking a long-term medicine or if a dose is needed during school. Involve the teacher or school nurse in watching for side effects, problems in taking medicines, or other problems.

Get The Answers To These Questions From Your Doctor Or Pharmacist

Write The Answers In The Space Provided As A Reference For You And Others Who Care For Your Child.

1. What is the name of the medicine and what is it supposed to do?

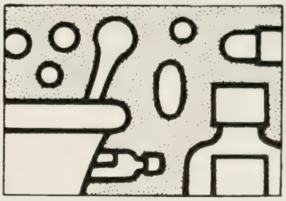
2. How and when do I give the medicine and for how long?

3. What food, beverages, other medicines, or activities should the child avoid while taking the medicine?

4. Are there any side effects, and what do I do if they occur?

5. Is there any written information available about the medicine?

Things You Should Know FOR YOUR GOOD HEALTH



MEDICINES: American Children's Other Drug Problem

Millions of American children put their health at risk because they take medicines incorrectly, according to *CHILDREN AND AMERICA'S OTHER DRUG PROBLEM,* a report released by the National Council on Patient Information and Education (NCPIE).

The NCPIE report noted that in a typical two-week peroid, more than 13 million children take medicines prescribed or recommended by a physician. Forty-six percent — almost half — take them incorrectly. The incorrect use figure holds steady whether the medication is treating common infections, chronic diseases, or life-threatening conditions.

"We find that almost half of the children who take medicines are not using them properly," stated Louis W. Sullivan, M.D., Secretary of Health and Human Services. "Children, or their parents, are either administering too much of a medicine, stopping the medication too soon, not taking enough of the medicine, or not taking the medicine at all," Sullivan noted.

Former FDA Commissioner Frank E. Young, M.D., Ph. D., emphasized that "medicines make an important contribution to the lies of children. Unfortunately, many American children are not taking (or being given) their medicines correctly. What makes this an especially serious concern is that even youngsters with potentially life-threatening conditions are misusing the drugs that can save their lives, such as cancer treatments or medication to prevent rejection of a transplanted kidney."

Dr. Young also pointed out, "there are clear financial losses when medicines are not used correctly. The cost of unused medicines. The cost of unnecessary diagnosis and treatment. And, of course, more frequent hospitalizations and emergency room visits — all adding to the upward spiral of health care costs in this nation."

The report noted that a few studies have shown that up to 4.6% of pediatric hospital admissions are related to medicines, and up to 44% of these problems are severe or fatal.

Poor communication about medicines by parents, health professionals, children, and caregivers is a major factor causing the medicine-taking problem according to the NCPIE report. Today's "busy schedules" and family disequilibrium also contribute to the problem. Other causes include negative attitudes about medicines, poor parental role models, inadequate monitoring, and lack of involvement of schools.

NCPIE suggests that, "The key to solving this problem is better communication among families, and between families, health professionals, and schools. Parents need to be better role models and make proper medicine use a family priority. Healthcare professionals need to be better communicators and make effective counseling a medical priority."

We learn two important facts about children and medicines from this report. Children are never too young to learn about safe medicine use. And children living at home are never too old to have their medicines monitored by their parents.

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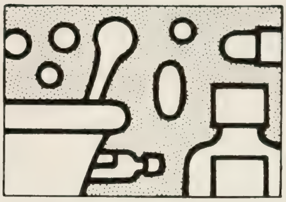
Whenever medicines are prescribed, tell your health professionals:

1. the medicines you are taking, including nonprescription medicines;
2. any problems you are having with your medicines;
3. medicines to which you are allergic;
4. if you are, or think you might be, pregnant.

NATIONAL COUNCIL ON PATIENT INFORMATION AND EDUCATION

Things You Should Know FOR YOUR GOOD HEALTH



Don't Forget To Ask!

Poor communication between older patients and their health care providers — doctors, pharmacists, and nurses — is a key factor in drug misuse. Older people are at particular risk for prescription drug misuse because people over 65 fill twice as many prescriptions as do younger people. And people over 60 experience 40 percent of all adverse drug reactions. In fact, nearly 25 percent of hospital admissions of older people are due to problems with taking prescriptions incorrectly. This means that if you are in the elder population, you should be talking more, much more with your pharmacist and physician.

Questions you should ask your pharmacist about your prescription medication include: What is the name of my medication? For what illness might my physician have prescribed this medication for me? How often should I take this medication? Will the food I eat interfere in any way with the effectiveness of this medication? Should I take the medication before, after, or between meals? What kind of effects will I notice when I begin to take this medication? Will these effects diminish or go away after I have taken this medication for a while? Will this medication make me drowsy enough to be concerned about driving or operating other dangerous machinery?

If you receive answers to all of these questions, you will have gathered a lot of information. With so much to know about medication, it is easy to get confused. This confusion is compounded if you are taking more than one medication at a time, as is often the case with older people. If keeping all of this information organized seems too much for you to handle, ask your pharmacist for explicit written instructions. Patient instruction leaflets exist for many medications. If a leaflet is not available for your medication, ask your pharmacist to prepare this information in an easy to read type-written format. (This may cost a few extra dollars but the aggravation you save and the problems you avoid will make it money well spent.)

Take advantage of your community's medication information resources by talking with your pharmacist and other health professionals.
It's For Your Good Health.

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USP

DRUG PRODUCT QUALITY
Review

A PUBLICATION OF THE USP DRUG PRODUCT
PROBLEM REPORTING PROGRAM

No. 13

THE 'PROOF' IS IN THE LABEL

A pharmacist from New York submitted a USP DPPR report questioning the use of the term "Elixir" as it appeared on the package of an oral Acetaminophen liquid. The product contained "Elixir" as part of its trade name even though the labeling stated that the product was alcohol free. The reporter felt the use of "Elixir" might be inappropriate.

• • •

USP REVIEW

Historically, pharmacists have been taught to recognize the differences in composition of oral solutions, suspensions, syrups, and elixirs. However, the differences in formulation for these articles may not be as obvious to consumers, or to other health care professionals. In addition, some of these terms have lost their original meaning over the years, and this has caused some confusion. One good example of this is that many products labeled as elixirs do not contain any alcohol.

In recent years, USP has been phasing out the term "Elixir" from drug monographs. Instead, USP is now using the broader designation "Oral Solution". *USP XXII–NF XVII*, which became official January 1, 1990, reflects the change. In that edition, the former monograph title *Acetaminophen Elixir* was changed to *Acetaminophen Oral Solution*.

The revision was stimulated in part by a survey of consumers conducted by an independent research firm for a pharmaceutical manufacturer. The survey results (published in the Jan.-Feb. 1987 issue of *Pharmacopeial Forum*) indicated that only a small percentage of adult consumers thought that the term "Elixir" connoted that a product contained alcohol.

Many pharmaceutical manufacturers are changing product formulations to decrease or remove alcohol entirely due to its pharmacological effect, but retaining the term "Elixir". Thus, use of the word "Elixir" cannot be trusted to be an indicator that alcohol is present. As far as USP is aware, a firm may continue to use the word "Elixir" as part of the product's trade name. However, the official USP monograph title, e.g. *Acetaminophen Oral Solution*, which is the established name of the drug product, must also be on the product label. Federal law requires that the amount of alcohol contained in a drug product be declared on the label of that product. The statement of alcohol content on the label of a product should be sufficient to alert health care professionals and/or consumers that alcohol is present.

In summary, one may find an "Elixir" that contains alcohol, or an "Elixir" that is alcohol free. To know if alcohol is indeed present in a preparation, one can no longer depend on the product's name but must read the label to determine the alcohol content.

To report problems with drug products, or for further information, contact the USP DPPR Program at 1-800-638-6725.

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Issued 8/90

Maryland pharmacy is featured in a new advertising campaign by USP. Photos appearing in national magazines show pharmacy students and Dr. Robert Beardsley at the University of Maryland School of Pharmacy and Nick Lykos at Lykos Pharmacy in Timonium.

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Continuing Education Quiz

The Maryland Pharmacist OCTOBER 1990

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by February 1, 1990. A continuing education certificate for one contact credit will be mailed to you within 30 days. Please type or print clearly.

Name ______________________________
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Is this program used to meet your mandatory CE? [ ] Yes [ ] No
Did this article achieve its stated objectives? [ ] Yes [ ] No
How long did it take you to complete the program? ____________ minutes

OTC Aspirin, Part II

1. The first warning sign of impending aspirin toxicity is most likely to be:
   a. hypoglycemia.
   b. tremors.
   c. hyperventilation.
   d. tinnitus.

2. Which of the following statements about aspirin is true?
   a. Absorption of unionized aspirin carries bicarbonate with it.
   b. Once inside gastric cells, the higher pH causes aspirin to ionize.
   c. Aspirin decreases the release of histamine from mast cells.
   d. Once aspirin diffuses into the blood, its concentration intracellularly increases, and further damages the body.

3. Based on the warning about Reye's syndrome on the labeling of aspirin-containing OTCs, the drug should not be given to children with a:
   a. bacterial infection.
   b. fungal infection.
   c. ringworm infection.
   d. viral infection.

4. Aspirin's activity is most closely associated with interferrence with release of:
   a. adenosine diphosphate.
   b. carbonic anhydrase.
   c. lactic dehydrogenase.
   d. monoamine oxidase.

5. Of the following, the best definition of angioedema is:
   a. extrapyramidal symptoms.
   b. giant hives.
   c. high blood pressure.
   d. variant angina.

6. The antidote given intravenously to offset changes in systemic pH caused by aspirin overdose is:
   a. ammonium chloride.
   b. atropine sulfate.
   c. ipecac.
   d. sodium bicarbonate.

7. Patients allergic to aspirin are most likely to have a cross-sensitivity to which of the following types of drugs?
   a. Acetaminophen products
   b. Nonsteroidal anti-inflammatory drugs
   c. Penicillin derivatives
   d. Sulfonamide congeners

8. Aspirin-containing products have a warning in their labeling advising against unsupervised use by patients with:
   a. glaucoma.
   b. diabetes.
   c. hypertension.
   d. peptic ulcer disease.

9. Aspirin-containing products also include a warning regarding patients with:
   a. asthma.
   b. heart disease.
   c. liver dysfunction.
   d. thyroid conditions.

10. Aspirin reportedly decreases the uricosuric effect of:
    a. acetylcysteine.
    b. allopurinol.
    c. colchicine.
    d. probenecid.

Classified

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"Rx" LICENSE PLATES are still available through the Association. When you receive your license renewal form, contact Mary Ann at the Association (727-0746) for details. The plates say "Maryland Pharmacists Association" in addition to "Rx" and the number. This offer is open to members and their families only.

THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Duff's Smorgasbord on Westview Mall Road, Beltway Exit 15-A. Visitors are welcome. For further information, contact President Harold Katcoff at 358-7036.

FREE CLASSIFIEDS. MPhA members may place a classified ad at no cost in the journal. Send your typewritten ad to 650 West Lombard St., Baltimore, Maryland 21201.

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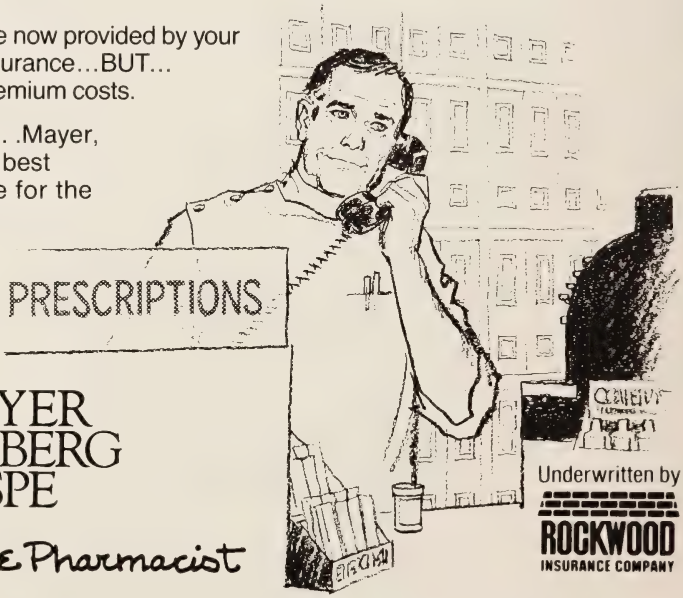

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Predictions on Techs and Salesmen

As we stand before the 1991 legislative session, the question that keeps coming back to me is that we have been a profession, for the most part, that has been reactive and not proactive. We react to both legislative and insurance pressures to our profession without having enough foresight to predict what these pressures are going to be.

One would ask what the future holds in store for our profession and I certainly do not hold a crystal ball. I would submit that two of the issues that we should be proactive in are the issues of the use, both proper and improper of pharmacy technicians, and the pharmacy profession's education of benefits managers of major corporations.

With regard to pharmacy technicians, it seems that too little regard has been given to the number of "techs" per pharmacist and to the education of these availing helpers. As we are asked to be clinical and patient consultants, it appears obvious that somebody has to count and pour. We should be the people who determine what should be done, not some legislator who has not the foggiest idea what clinical pharmacy is about.

On the other hand, what is happening at an alarming rate is that a new facet of corporate America is the benefits manager. These are the brave souls that have to buy benefits for the corporations that employ hundreds or thousands of employees. They have nobody educating them on the values of community pharmacy or DUR. We should be the people who help determine the best value for corporate America; not just a salesman from a mail order firm.

To this end, I am determined to appoint a blue ribbon panel to study these problems so that the profession can go forward to the next century with our destiny determined by pharmacists.

Mark Levi, P.D.

MPhA President

Continuing Education

This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

Advising Consumers on OTC External Analgesic Products

by **Thomas A. Gossel, R.Ph., Ph.D.**
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Gossel

Wuest

Goals

The goals of this lesson are to:

1. discuss skeletal muscle pain and its management with OTC external analgesic products; and
2. provide specific information to convey to consumers to insure they will use these OTC products correctly, and to maximize overall therapy.

Objectives

At the conclusion of this lesson, participants should be able to:

1. describe basic components of skeletal muscle pain as they relate to modification with OTC external analgesic products;
2. list various classes of drugs that are used as external analgesics, and state advantages and disadvantages of each;
3. discuss the pharmacology and toxicology, precautions, contraindications, and correct methods of application of external analgesics;
4. differentiate between various product dosage forms of external analgesics; and
5. list points to convey to consumers to assure that they will benefit maximally from therapy of skeletal muscle discomfort.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from

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Many Americans pursue sports activities with zeal. They also perform household and gardening chores, and other activities that strain their muscles. It's no surprise then that they develop skeletal muscle aches and pains.

Most skeletal muscle discomfort is usually mild and short-lived. Occasionally, symptoms suggest more serious pathology. Pharmacists may be asked to counsel on such discomfort and suggest treatment.

This lesson reviews the pathology of skeletal muscle pain. It describes OTC drug products that are used as external analgesics, and lists actions and limitations for their use. It also presents information to convey to consumers to maximize the correct use of these products.

Muscle Pain

When one considers the large surface area of skeletal muscle in the body, it is easy to understand why muscle pain is so common. Pain receptors located throughout skeletal muscle are stimulated by strenuous exercise or other trauma. Pain impulses are transmitted to the brain where they are interpreted as muscle pain.

Pain can also develop following prolonged periods of inactivity, such as driving for extended periods. Poor posture, and bending and/or lifting awkward or heavy objects can cause it. Muscle pain can also follow periods of dampness and/or cold, rapid temperature changes and air currents. When injury is severe, skeletal muscles can become stiff and sore, and difficult and painful to move.

Delayed muscle soreness differs somewhat from other more acute pain and chronic inflammation. The former usually occurs a day or two after injury or abuse.

Muscle pain is difficult to describe, and even harder for health care professionals to accurately interpret. It is highly individualized and subjective. It is almost impossible to describe to others in terms that the listener can interpret in like manner. Deep-seated pain originating in skeletal muscles is often described as "dull" or "achy," and its locus is usually hard to pinpoint.

The way people experience pain is, for the most part, acquired rather than inborn. People react to painful stimuli based on previous experiences. Each person learns to react in specific ways to each type of stimulation.

In almost every instance, pain is associated with psychological and emotional factors, and is invariably

Table 1

Representative OTC external analgesic products

Product	*Form*	*Ingredient(s)**						
		ME	CA	MS	TS	MN	CP	HD
Absorbine Arthritic	Lotion	x		x		x		
Analbalm	Lotion	x	x	x				
Analgesic Balm	Ointment	x		x				
Aspercreme	Lotion Cream	x			x			
Banalg	Lotion	x	x	x				
Banalg Hospital Str.	Lotion	x		x				
Ben-Gay	Lotion, Gel	x		x				
Counterpain Rub	Ointment	x		x				
Dencorub	Cream	x	x	x				
Doan's Rub	Cream	x		x				
Emul-O-Balm	Lotion	x	x	x				
Exocaine Odor Free	Cream				x			
Exocaine Plus Rub	Ointment			x				
Heet	Lotion		x	x			x	
Icy Hot	Balm, Rub	x		x				
Infra-Rub	Cream	x		x				
Mentholatum	Cream, Rub	x	x					
Minit-Rub	Ointment	x		x				
Musterole Deep Str.	Ointment	x		x		x		
Musterole Regular	Ointment	x	x					
Myoflex	Cream				x			
Omega Oil	Liniment			x		x	x	x
Panalgesic	Lotion	x	x	x				
Pronto Gel	Gel	x	x	x		x		
Rid-A-Pain	Liniment			x		x		
Sloans	Liniment		x	x			x	
Soltice Quick Rub	Cream	x	x	x				
Sportscreme	Cream				x			
ThermoRub	Ointment					x	x	x
Zostrix	Cream						x	

*ME = Menthol; CA = Camphor; MS = Methyl salicylate; TS = Triethanolamine salicylate; MN = Methyl nicotinate; CP = Capsicum oleoresin or Capsaicin; HD = Histamine dihydrochloride

associated with anxiety. Therefore, the placebo effect can not be disregarded. The fact that something is being done to relieve pain (i.e., in the case of external analgesic products, rubbing a product on the skin) contributes greatly to the therapeutic effect of the medication used. This placebo effect is magnified when the agent has a characteristic "medicinal" odor.

External Analgesics/Rubs

External analgesics are agents that are applied to the skin to relieve pain. For purposes of this lesson, discussion will include products and ingredients that soothe sore muscles, tendons, ligaments, and bursa. Agents such as local anesthetics and skin protectants, which are also external analgesics, will be discussed another time. Representative examples of commercially available products are shown in Table 1.

Counterirritants. The practice of voluntarily producing mild pain or other neural sensation to counter a more intense one is instinctive. Pain sufferers bite their lips, clench their fists, hit themselves vigorously, massage skin areas, or dig their nails into their palms in order to reduce perception of more intense pain. Counterirritants are medicinals which are applied to the site of pain for the same reason.

Most counterirritants produce a mild, localized inflammatory reaction. The objective is to provide analgesic relief to another area of the body, generally within the deeper tissues of muscle. The overall intensity of response is dependent on the specific counterirritant and its concentration, vehicle used, and period of contact with the skin.

Though there is no unanimity of opinion, several theories have been advanced to explain their pharmacologic action. One such theory is described as the "summation of pain stimuli." The thesis is based on belief that counterirritants stimulate the skin's receptors by inducing classical signs of inflammation (i.e., heat, erythema, pain, and swelling). The theory continues that these overwhelm the painful stimuli originating elsewhere in the affected muscle. In some respect, counterirritation is likened to acupuncture.

The theory makes some sense from a physiologic standpoint. Stimuli emanating in skeletal muscle travels along nerve fibers in a common pathway with impulses from the skin. Both impulses are referred to the same area of the spinal cord for transport to the brain. By increasing dermal sensation, the individual's perception of muscle pain can be completely obliterated.

Certain counterirritants also have rubefacient action. This means they cause a reactive vasodilation of cutaneous blood vessels which brings more blood to the area. This, in turn, increases dermal temperature, which results in a feeling of warmth and comfort.

Counterirritants have been evaluated for safety and efficacy by panels of experts who reported their findings to FDA. Table 2 lists ingredients that meet both these criteria, and are therefore available in OTC external analgesic products. They are subgrouped into four chemical and/or pharmacologic groups that provide qualitatively different types of irritation. In addition, numerous other agents are still used in OTC products because they have some, but inconclusive, evidence of safety and effectiveness. These latter

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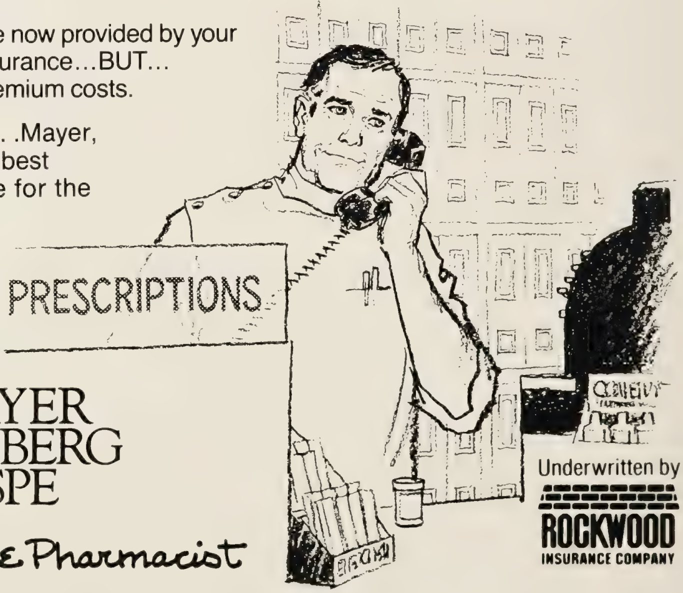

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doses are effective.

Eucalyptus oil and one of its major ingredients, eucalyptol, are counterirritants and rubefacients. Like other essential oils, eucalyptus oil has a characteristic "medicinal" odor. It is also an irritant and rubefacient that is said to cause a sensation of warmth followed by mild anesthesia. Although used in concentrations ranging from 0.5 to 3 percent, there are insufficient data to support effectiveness of such strengths. It may remain in OTC products for its odor, but not be claimed to have therapeutic effects.

Triethanolamine salicylate (trolamine salicylate) is an ester produced by interaction of equal amounts of triethanolamine and salicylic acid. It is used in 5 to 10 percent concentrations.

Triethanolamine salicylate is believed to act by inhibiting prostaglandin formation peripherally, and to lesser extent, centrally. Though known to be absorbed from the skin, there is scant evidence to show the extent, and no significant analgesic or anesthetic activity has been demonstrated.

Table 2

Safe and Effective Counterirritants

Group	*Characteristics*	*Ingredients*	*Concentrations*
A	Induce redness and irritation. More potent than other commonly used counterirritants	Allyl isothiocyanate Ammonia water Methyl salicylate Turpentine oil	0.5–5% 1–2.5% 10–60% 6–50%
B	Produce cooling sensation. Have strong organoleptic properties	Camphor Menthol	3–11% 1.25–16%
C	Cause vasodilation	Histamine dihydrochloride Methyl nicotinate	0.025–0.10% 0.25–1%
D	Incite irritation without rubefaction. Equal in potency to Group A ingredients	Capsaicin Capsicum Capsicum oleoresin	0.025–0.25% 0.025–0.25% 0.025–0.25%

ingredients can remain on the market until manufacturers complete their clinical studies.

The more potent counterirritants include those listed in Group A. They are strong irritants that cause redness and warmth at the site of application. Group B counterirritants provide cooling and/or warmth, and a tingling sensation to the skin. Their overall response may be partly due to placebo action, because their odors are strongly suggestive of pain relief. Group C substances are vasodilators. Group D contains capsicum derivatives. The latter substances reportedly provide counterirritant activity that is often as great as Group A, but without rubefacient properties.

While the exact mechanism of capsicum derivatives such as capsaicin has not been determined, a popular theory is that they block pain signals from the periphery to the CNS. This theory continues that a neurotransmitter called "Substance P" is responsible for relaying pain messages along nerve fibers to the brain. Capsicum derivatives are thought to stimulate the release of Substance P, then deplete its availability and prevent synthesis. This, then, obliterates pain impulses. Some products containing capsaicin are also promoted for relief of pain associated with herpes infection.

Combination Products

FDA considers it to be therapeutically rational to combine two or more active ingredients to produce a desired outcome. Manufacturers of external analgesic products can mix up to four ingredients, provided that each counterirritant belongs to a different group listed in Table 2. However, it is considered to be irrational to combine counterirritants with topical analgesics or antipruritics, local anesthetics, or skin protectants. These other drug product ingredients could oppose and even nullify the desired irritation that is beneficially produced by the counterirritant.

Some ingredients may act as counterirritant in one concentration, and in reduced concentration, as analgesic. To illustrate, in concentrations greater than 1.25 percent, menthol excites sensory receptors by counterirritant action. In concentrations less than 1.0 percent, it directly depresses cutaneous pain receptors and thereby exerts topical anesthetic properties similar to phenol and other alcohols. Certain esters of salicylic acid also exhibit similar activity.

Other External Analgesic Product Ingredients. Other drugs have also demonstrated safety, but have not yet proven efficacy as external analgesics. As explained earlier, they are still employed in a number of OTC external analgesic products.

Aspirin is the most widely used, safe and effective internal analgesic in the U.S. Applied topically, it is neither irritant nor counterirritant. Benefit derived from external application is due to absorption and systemic distribution in the same manner as following oral administration. The exact mechanism by which aspirin produces analgesic action is not known. It is generally conceded that it works in part by anti-inflammatory action peripherally, probably by interfering with synthesis of prostaglandins, and by depressant effect centrally. While concentrations of 5 to 6 percent have been used in OTC preparations for topical application, there is little evidence that such

Safety of External Analgesics

Absorption of external analgesic product ingredients through the skin is minimal when the products are used as directed. They are, therefore, safe. If swallowed, however, they may be extremely toxic. They should be kept out of the reach of children.

Excessive rubbing, bandaging tightly to occlude the area of application, or exposure to heat or sunlight following application of an external analgesic product may incite severe skin damage with blistering. Susceptible persons may also be sensitive to the ingredients. The resultant rash created by allergic sensitization is difficult to distinguish from redness caused by excessive rubbing. Therefore, if a rash or irritation appears, the product should be immediately discontinued and the area washed and rinsed thoroughly.

Persons sensitive to aspirin may react adversely to methyl salicylate. The reaction is uncommon. Such persons should still be cautioned to avoid products containing methyl salicylate.

Vehicles and Product Dosage Forms

The vehicle is important to the overall action of external analgesic products. Since it is undesirable for them to be absorbed systemically, the vehicle should limit transdermal absorption.

Creams. Creams are generally water-soluble bases that can be rubbed onto the skin without leaving an oily residue. Cream dosage forms for counterirritants are rare, possibly because they don't "feel" right for this purpose. A few available products are promoted as "greaseless" formulations.

Liniments. Characterized as mixtures of drugs in alcoholic solutions of soaps, emulsions, or oils, liniments can be applied with rubbing. Oleaginous-based products are less irritating to the skin than alcoholic products and are specifically intended for application with massage. Alcoholic or hydroalcoholic-based liniment products are intended for applying counterirritants or rubefacients, without excessive massage or prolonged exposure to heat. Liniments are well accepted for use as a vehicle for counterirritants. They should not be applied to broken or bruised skin.

Lotions. Dispersions or suspensions of drugs in alcoholic or aqueous media, lotions are often emulsions. Following application, they dry quickly. Lotions are intended for use over widespread areas. They are especially suited for hairy areas of the body since they easily penetrate down to the skin surface.

Ointments. Ointments are semisolid preparations intended for application to skin and mucous membranes. They are widely used as a counterirritant vehicle due to consumer acceptance of their texture. They are especially advantageous as vehicles for counterirritants which are to be applied with massage. Ointments leave an oily residue after application, which adds to the belief that they are "good."

Gels. Gels (jellies) permit quick penetration of ingredients into skin and hair follicles, and provide a greater sensation of warmth than products formulated as creams, liniments or ointments. Again, while popular vehicles for other topical formulations, gels are not common with OTC external analgesics.

Gel-based products should not be used excessively. They must be applied cautiously, and not rubbed in vigorously. To do so may cause excessive dermal irritation and burning.

Heat and Massage

In addition to counterirritants and rubefacient drugs, heat and/or massage alone are alternative therapies that may also provide relief from skeletal muscle pain. Heat produces analgesia by elevating the pain threshold of peripheral nerve fibers. Heat is also a muscle relaxant both locally and centrally, via the power of suggestion. It can be applied with a hot water bottle, electric heating pad, or as a moist heat compress. The latter is considered the most effective method of application.

Heat also benefits muscle pain because it helps restore elasticity to collagen. Collagen is the most abundant protein in humans and a basic building constituent of tendons, ligaments and muscles. Collagen normally stretches like a coil with work or exercise, and recoils to normal length after stretching. If injured by excessive stretching or injury, it does not return to its previous length, thus causing discomfort.

Heat and massage increase both blood and lymph flow in the skin and underlying structures. This enhances oxygen and nutrient delivery, and removal of metabolic waste products.

In fact, a possible benefit of OTC external analgesic products may be that they are applied with rubbing and massage. This physical action may impart some benefit. Unfortunately, studies comparing massage with topically applied products are nonexistent. It is almost impossible to conduct controlled, objective investigations on comparative effectiveness of massage techniques.

Heat treatment is contraindicated in malignancy, whenever it is unwise to increase blood flow, and in circulatory disturbances such as peripheral vascular disease which occurs with diabetes. Patients with peripheral nerve injuries cannot feel the heat, so they may not be able to tell when they're getting burned.

Counseling Consumers

Skeletal muscle pain associated with strains is characteristically described as dull and achy. If the pain is intense and reported as sharp and/or jabbing or by other descriptors, the individual should be referred to a physician. Likewise, pain in or near a joint may reflect fractured or torn ligaments or tendons, or arthritis. To apply OTC external analgesic products may only delay an accurate diagnosis, and accentuate damage.

Symptoms that persist beyond 7 days may signal that an underlying condition or disease is present that requires a physician's diagnosis and treatment. To continue self-treatment beyond 7 days may delay proper treatment and exacerbate the condition.

Once a pharmacist is assured that the affliction is minor and related to a specific benign injury, self-medication with an OTC external analgesic product can be recommended. External analgesics provide temporary relief, but are not curative.

It is common practice as part of athletic training procedures to apply counterirritants, then cover with a bandage to either protect clothing, or to increase activity of the drug. It is desirable to protect clothing. There are also no current data to substantiate that risk of adverse reactions to counterirritants is increased when the application site is lightly covered. With occlusive dressings, however, there is increased risk for irritation and blistering, and they should be avoided when using counterirritants.

Abuse of Benzodiazepines in the Elderly

Mary Kate Cleary

People over the age of sixty-five will make up almost seventeen percent of the population of the United States by the year 2020. Given that the elderly consume 32 percent of all prescription drugs sold in the nation, the drug related problems among the elderly seem clear. The problems include the misuse and abuse of over-the-counter medications and usually of prescription medications. The elderly tend to misuse their prescription drugs because they do not think that they need the drug anymore, or they say they feel better so they stop taking the drug, or they think that the drug has bad side effects, or they do not understand why they are taking the drug, or they think that they can save money by taking their prescription less frequently than recommended (1). A more serious problem of the elderly and drugs is the abuse of prescription drugs. This problem is rooted in the physiological, psychological, social, and socioeconomic factors. A variety of physiological factors associated with the normal process of aging lead to an increased risk of drug abuse. These factors include a tendency to develop multiple, chronic pathologies such as reduced circulatory, liver, digestive, and kidney functions, changes in patterns of sleeping and elimination, and short-term memory loss (2). The number of disease states increases and so does the need for more medications and therefore the side effects and adverse drug reactions also increases. A number of psychological factors that occur in aging also increase the risk of drug abuse. For example, the elderly person may be afraid of disruption and this may lead to drug abuse. These psychological states accompany life span changes that occur with aging as the loss of a spouse, loss of employment, decreased physical abilities, loss of family and friends, and the development of negative attitudes about growing old. The abuse of drugs by elders may also be due to social factors. Many sources of drug information have an impact on the drug-taking behavior of the elders. These sources include the media and especially contact with family and friends. Elders also have financial stresses and limitations that are new to this period in their lives. The realities of living on a fixed income have a great impact on their attitudes toward seeking out health care and the purchasing of medication.

The aging process is associated with both physiologic and pathologic declines in almost all body systems. Therefore, a review of the processes that usually influence the pharmacologic response to drug therapy in the elderly is necessary.

For the eyes, visual impairment is seen in twelve percent of the elderly with two percent classified as being legally blind. An age-related loss of visual acuity and the occurrence of presbyopia is most likely the result of diminished elasticity of the optic lens. There is also a decrease in the ability to distinguish between the shades of blue and green due to a yellowing of the lens. A diminished pupillary response to changes in illumination and the formation of microopacities on the lens impairs reading skills. Also, conditions such as diabetic retinopathy, cataracts, glaucoma, and retinal regeneration can further decrease vision (3).

Approximately twenty-eight percent of the elderly are hearing impaired because almost all components of the auditory system change. The predominant changes include the diminished ability to disriminate frequency changes and a delay in the central processing of auditory messages (4).

In the respiratory system, vital capacity and forced expiratory rates decline linearly with age. These changes are thought to result from a loss of lung elastic recoil. Restricted lung expansion due to an age-related increase in chest wall rigidity also contributes to abnormal pulmonary function. The elderly also appear to

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Editor's Note: This article is the second of several columns featuring student research projects for the UMAB School of Pharmacy's Geriatric Imperative Course. These articles have been selected by an expert panel of reviewers including Peter P. Lamy, Ph.D., Kathleen Gondek, M.S., and Ilene Zuckerman, Pharm.D. of the School.

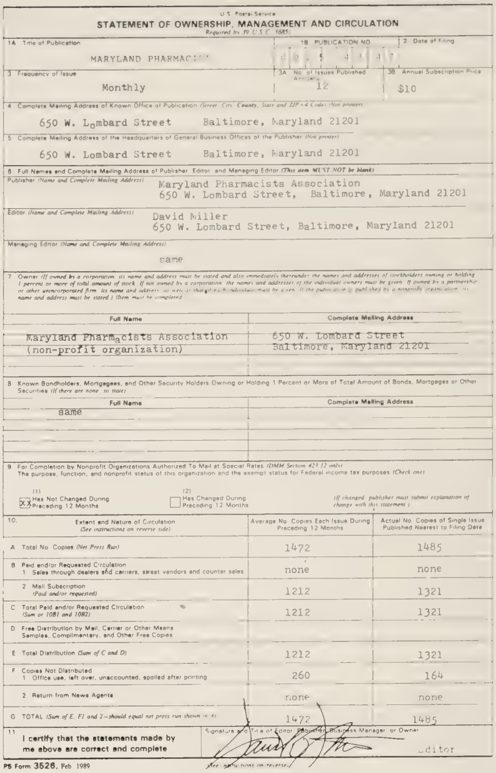
have a decreased ventilatory response to both hypoxia and hypercopnia which is possibly related to diminished neural output to the respiratory muscles. Aspiration, cardiac dysfunction and pulmonary infection also compromise respiratory ability. Some predisposing conditions that place the elderly at an increased risk for aspiration include alterations of esophageal sphincter pressure, impaired level of consciousness and mechanical interference. The prevalence of cardiac dysfunction especially congestive heart failure increases dramatically and usually results in pulmonary symptoms such as dyspnea. Pulmonary infections also constitute a major health problem (5).

The gastrointestinal system is composed of several organs, each of which has its own set of problems. The most common symptom of esophageal disease is produced by several disorders which occur at an increased frequency in the elderly. These disorders can include myasthenia gravis, disorders of the Central Nervous System or peripheral nerves such as stroke or Parkinson's disease, disorders of the upper esophageal sphincter such as hypopharyngeal carcinoma or pharyngeal diverticulum, motility disorders such as diabetes mellitus and infections such as candidiasis. Another organ in the gastrointestinal system includes the colon and its associated condition of constipation. Some predisposing factors to this condition include bed restriction, improper diet, lack of physical activity and drug use. Several diseases seen with an increased frequency in the elderly include malignancies, metabolic disorders, depression, and dementia (6).

It is estimated that approximately five to ten percent of the elderly in the community and almost forty-eight percent of those living in institutions are incontinent. The primary causes of this incontinence are detrusor instability, overflow incontinence, and sphincter weakness. Drugs such as diuretics may also aggravate the condition. Urinary retention may also occur due to such factors as benign prostatic hypertrophy, malignancies, stress, infections, neurogenic bladder and drugs such as anticholinergics (7).

Osteoporosis and osteoarthritis are the most common disorders of the aging skeletal system. The severity of osteoporosis which is marked by demineralization of bone tissue, increases as age increases. Poor dietary intake and/or absorption of calcium, lack of physical activity, and estrogen withdrawal in females at menopause are all conributing factors. Osteoarthritis is universal in older persons. This change is usually present in joints subject to weight bearing like the spine, knees, first metatarsopharangeals or repeated strain on joints such as distal interphalanges or first carpometacarpals. Osteoarthritis is thought to occur secondary to the cumulative stresses of a lifetime of joint use. These alterations in the musculoskeletal system as well as chronic disease like stroke and arthritis may affect both strength and mobility (8).

The psychiatric conditions of a patient may also affect the pharmacologic response of a drug. In the elderly, depression is the most frequent psychiatric disturbance and is clinically significant in about ten percent of the cases. Increased activity of central amine oxidase and decreased activity of norepinephrine are thought to be important etiologic factors for depression. Both the objective and subjective symptoms of sleep disorders also increase. The elderly are inclined to spend more hours in bed, take longer to fall asleep, and have a reduction in total sleep time as a result of sleep being fragmented by an increased number of awakenings. There are also pathologic conditions that interfere with sleep including altered biologic rhythms, disordered cognitive functioning, sleep cycle regression, physical and emotional disease such as osteoarthritic pain, drugs, worry and depression. Approximately ten percent of the elderly have dementia and the prevalence increases up to twenty-two percent in those who are eighty years and over. Primary degenerative dementia arises from endogenous structural and functional brain changes like Alzheimer's disease. Multi-infarct dementia occurs secondary to hypertension and stroke. Dementia can also be classified as secondary to other disease states such as Parkinson's disease or depression (9).



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Pharmacokinetics is the study of the absorption, distribution, metabolism, and elimination of drugs. In

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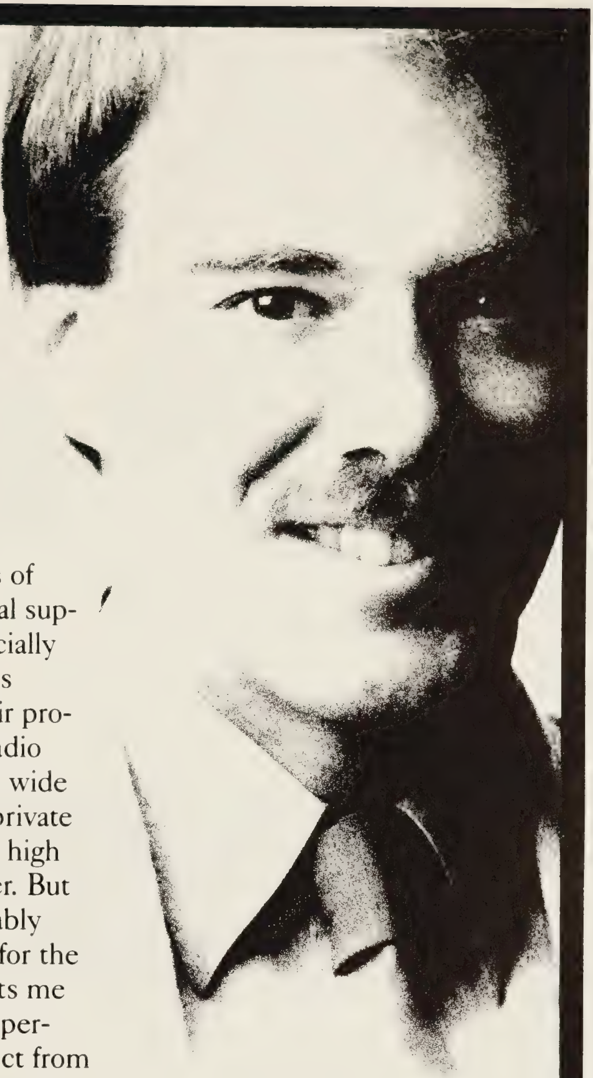

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Scott Rickards

SCOTT RICKARDS
RICKSAVE DRUG
NAPLES, MAINE

McKesson

Continued from page 10.

other words, pharmacokinetics is "what the body does to the drug" (10). Changes in a drug's pharmacokinetic parameters may lead to a higher or lower concentration of the drug at its site of action, but also might potentially modify accumulation of active or toxic metabolites. Therefore, the ability to understand and predict clinically important age related changes in drug disposition would help in the design of more effective and less toxic dosage schedules for the elderly (11).

The oral route is the most frequent mode of administration. Therefore, changes in gastrointestinal function are important factors that influence drug absorption. The number of mucosal cells that line the gastrointestinal tract declines with age and ultimately reduces the gastrointestinal tract surface area (12). Alterations in intestinal blood flow, intestinal motility, and the efficiency of transport mechanisms could tend to delay or reduce drug absorption (13).

In discussing the distribution aspect of pharmacokinetics, body composition becomes very important. Major changes in body composition occur as people age. Both total body water and lean body mass decline with age whereas the fraction of total body weight composed of adipose tissue may increase during the aging process (14). Body fat increases from approximately twenty percent to forty percent of total body weight in men and from thirty percent to fifty percent in women at the expense of lean mass, whereas there is a concomitant loss of body water, about ten percent to fifteen percent as a function of aging (15). In theory, highly lipophilic drugs should have an increase in their volume of distribution. Conversely, the plasma concentrations of hydrophilic agents which mainly distribute in lean body mass and body water could be higher due to a decreased volume of distribution and this change potentially contributes to the development of adverse effects (16). Women tend to have more extensive distribution to lipid soluble drugs and less extensive distribution of relatively water soluble drugs (17). A prolonged and possible increased response to such lipophilic agents may occur. The reverse process may occur with hydrophilic agents.

The aging process also has important influences on biological variables such as hepatic blood flow, metabolic capacity, and protein binding (18). Since only the free, non-protein bound form of a drug is active, a reduction in plasma protein levels may result in higher free levels. Consequently, the intensity of drug action may increase. Although beta-globulin levels increase, the albumin levels are approximately nineteen percent lower in the elderly than in the young (19). Aging is associated with a decrease in binding of drugs to red blood cells, resulting in higher concentrations of free drug (20). Hepatic blood flow declines with age partly because of reduced cardiac output. Hepatic blood flow rather than microsomal-enzyme activity is the major determinant of total clearance of a number of drugs (21). Elderly patients also have a reduced ability to metabolize a number of drugs (22). A deficiency in concentrations of both Vitamin C and folate has been associated with impairment in the hepatic metabolism of certain drugs (23). However, as one of the common enzyme inducers, cigarette smoke contains a variety of inorganic and organic constituents, such as nicotine and certain polycyclic hydrocarbons, is a well recognized inducer of drug metabolizing enzymes (24).

Renal excretion is probably the most important route of drug elimination from the body. In the kidney, net excretion is the result of three processes: glomerular filtration of the free fraction of the drug, tubular secretion, and tubular reabsorption. Therefore, changes in either of these steps in renal function associated with aging will have important pharmacokinetic implications for many drugs whose main elimination is dependent on renal clearance. Glomerular filtration rate decreases with age as does the renal plasma flow, the ability to concentrate urine and conserve sodium (25).

Pharmacodynamics describes the time course of drug effects and tries to relate concentrations of drugs at the site of action to pharmacological effects. Pharmacodynamics is "what the drug does to the body" (26). Organ sensitivity in the elderly may be related to such factors as depletion of neurotransmitters, disease states, physiologic changes and nutritional status. This change in effector organ sensitivity may result in an exaggerated or depressed pharmacodynamic response. Aging is associated with a reduction in both acetylcholine and dopamine in the central nervous system (27).

Adverse drug reactions are responsible for significant morbidity and mortality among the elderly. Even though the elderly make up twelve percent of the United States population, they consume 32 percent of all prescription drugs and experience thirty percent of all adverse drug reactions reported to the Food & Drug Administration. In general, there are four kinds of drug interactions: desirable, undesirable, insignificant, and unknown. Drug interactions can cause several types of pharmacological responses. These responses include enhancement of the effects of one or the other drug, development of totally new effects, inhibition of the effects of one or the other drug, and no change in response. These drug interactions may occur through many mechanisms such as the following: decreased or increased intestinal absorption; decreased renal excretion; direct competition for some receptor sites; displacement from carrier proteins; interference with synthesis of enzyme, coenzyme, or carrier; hormonal effects on genetic systems; or effects due to vehicle or to components in drug formulation (28).

An adverse drug reaction is defined as any unintended or undesired effect of a drug in a patient. This effect or clinical manifestation may include abnormal laboratory tests, symptoms, or signs (29). The most common type of adverse drug reaction is the side effect which is an unintended effect that is not directly related to the drug's primary mechanism of action, is not necessarily dose related, and usually occurs at therapeutic serum concentrations (30). An example of this type of adverse drug reaction is hypokalemia as a result of diuretics or dry mouth as a result of tricyclic antidepressants. The second most common type of adverse drug reaction is drug toxicity or an undesired side effect that is usually directly related to the drug's primary mechanism of action and is dose dependent (31). An example of this type of adverse drug reaction is excessive daytime sedation as a result of hypnotics or diarrhea as a result of laxatives. Immunologic reaction is the third most common type of adverse drug reaction. It is usually unrelated to the known pharmacologic effects of the drug or to its dose. The clinical manifestation such as rash, fever, or bronchospasm depends upon the manner in which the host responds immunologically. Idiosyncratic reactions are rare, unpredictable adverse drug reactions that are unrelated to dose and to the drug's mechanism of action (32). They are not immunologically mediated. An example of an idiosyncratic adverse drug reaction is agranulocytosis brought on by chloramphenicol.

The drug interactions can occur between drug and disease, drug and drug, and drug and food. Certain drugs are contraindicated in specific disease states because those drugs produce predictable adverse reactions that are not necessarily related to the drug's primary mechanisms of action. For example, patients with Alzheimer's-type dementia may develop paradoxical reactions to a variety of psychoactive agents. Benzodiazepines may make these patients more confused and agitated and drugs with anticholinergic properties such as thiothixene may exacerbate the memory and the thought disorder. The incidence of drug-drug interactions varies according to the number of drugs used and the care with which the adverse drug reaction etiology is determined (33).

Another example of an adverse drug reaction is the effect of acute and chronic drug therapy on nutritional status. Drugs can both directly and indirectly cause nutritional depletion in an elderly patient (34). The chronic administration of drugs to an elderly patient with subclinical malnutrition can cause deficiences in specific nutrients that can then present as breathlessness, weakness, confusion, "pseudosenility," anemia, depression, auditory dysfunction, and difficulty in walking (35). Especially important is the frequent use of drugs with gastric erosive properties because many elderly patients suffer from Vitamin C deficiency and deficient ascorbic acid levels can prolong gastric hemorrhage (36).

There are a number of factors which may contribute to the susceptibility of the elderly towards unwanted drug effects. It has been consistently shown that the incidence of adverse drug reactions increases with the number of drugs being taken. The incidence of adverse drug reactions increases exponentially rather than linearly with the number of drugs given to patients which

Continued on page 15. . . .

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Am Fam Phys 1987;36:133-140

Ceclor® Pulvules® 250 mg
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Established therapy for today's patients

For respiratory tract infections due to susceptible strains of indicated organisms

Brief Summary.

Consult the package literature for prescribing information.

Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β-hemolytic streptococci).

Contraindication: Known allergy to cephalosporins.

Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Hypersensitivity reactions have been reported in about 1.5% of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of **serum-sickness-like** reactions have been reported with the use of Ceclor. These are characterized by findings of erythema multiforme, rashes, and other skin manifestations accompanied by arthritis/arthralgia, with or without fever, and differ from classic serum sickness in that there is infrequently associated lymphadenopathy and proteinuria, no circulating immune complexes, and no evidence to date of sequelae of the reaction. While further investigation is ongoing, **serum-sickness-like** reactions appear to be due to hypersensitivity and more often occur during or following a second (or subsequent) course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults with an overall occurrence ranging from 1 in 200 (0.5%) in one focused trial to 2 in 8,346 (0.024%) in overall clinical trials (with an incidence in children in clinical trials of 0.055%) to 1 in 38,000 (0.003%) in spontaneous event reports. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy; occasionally these reactions have resulted in hospitalization, usually of short duration (median hospitalization = two to three days, based on postmarketing surveillance studies). In those requiring hospitalization, the symptoms have ranged from mild to severe at the time of admission with more of the severe reactions occurring in children. Antihistamines and glucocorticoids appear to enhance resolution of the signs and symptoms. No serious sequelae have been reported.
- Stevens-Johnson syndrome, toxic epidermal necrolysis, and anaphylaxis have been reported rarely. Anaphylaxis may be more common in patients with a history of penicillin allergy.
- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1% and, rarely, thrombocytopenia and reversible interstitial nephritis.

Abnormalities in laboratory results of uncertain etiology.

- Slight elevations in hepatic enzymes.
- Transient lymphocytosis, leukopenia, and, rarely, hemolytic anemia and reversible neutropenia.
- Rare reports of increased prothrombin time with or without clinical bleeding in patients receiving Ceclor and Coumadin concomitantly.
- Abnormal urinalysis; elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

PA 8791 AMP [021490LRI]

Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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Continued from page 13.

indicates that the effects of multiple drugs are simply not additive. This exponential rise can be attributed to a number of factors. First of all, high prescribing rates are associated with severity of illness and patients who take many drugs tend to be more severly ill and therefore are predisposed to adverse effects. Secondly, drug interactions could play a part. It was demonstrated that the rates of reaction to individual drugs were dependent upon the number of drugs given at the same time.

Another factor which may increase the elderly's susceptibility to unwanted drug effects is the type of drug prescribed. Many of the drugs most often seen as causing adverse drug reactions are those prescribed most often in the elderly. For example, digoxin is responsible for many adverse drug reactions and about one third of these are life-threatening. The toxicity of digoxin is enhanced by co-administration of diuretics, a problem that is especially pertinent in geriatric medicine (37).

Other factors which increase the elderly's susceptibility to unwanted drug effects are altered pharmacokinetics and pharmacodynamics. Seventy to eighty percent of the adverse drug reactions are dose related. Therefore, age associated alterations in pharmacokinetics may result in higher serum and tissue concentrations in the elderly and may lead to a higher incidence of adverse drug reactions. Pharmacodynamic response has been found to increase with age and the elderly are therefore more sensitive to pharmacological adverse effects and dosage should be altered. This has been observed with drugs that act primarily on the Central Nervous System, most notably the benzodiazepines (38).

Homeostatic mechanisms also become less effective as age progresses. The elderly are less able to regulate blood glucose levels, pulse rate, blood pressure, and oxygen consumption. Since drugs disturb biochemical and physiological systems, the older person may not have the capacity to restore the balances and therefore may be at a greater risk from unwanted drug effects (39).

Drugs that cause a particular problem in the elderly are the benzodiazepines. The benzodiazepines have sedative, anxiolytic, anticonvulsant, and muscle relaxant properties and their use has been widespread since their introduction twenty years ago. Initially the benzodiazepines were thought to be well tolerated and non-dependent, even with long-term administration (40). This view has been challenged and the justification for continued use has been questioned. The benzodiazepines may be separated into groups depending upon their duration of action. Most benzodiazepines are quickly and completely absorbed from the gastointestinal tract either orally or rectally. Diazepam is not readily absorbed after intramuscular injection. Diazepam is highly lipid soluble and both plasma and brain concentrations initially fall rapidly due to redistribution in fat and muscle so that the effect of a single dose is short lived (41). Saturation of peripheral sites with many doses reduces this rate of redistribution so that the drug becomes truly long acting and regular once-daily administration is sufficient to produce a twenty-four hour effect (42). In normal individuals, the plasma half life of diazepam after a single dose is four times longer at age eighty than at age twenty although there is no difference in plasma clearance. This is because the distribution of drugs changes a great deal with age since lean body mass and total body water decrease whereas the percentage of total body fat increases (43). Diazepam is metabolized by the liver to its active metabolite, desmethyl diazepam which has similar pharmacological properties and a half life of fifty-one to one hundred twenty hours (44). The plasma clearance of diazepam in patients with cirrhosis is prolonged and so this drug should be used cautiously and the dose reduced (45).

Adverse drug reactions to the benzodiazepines are twice as common in the over-seventy as compared with the under-forty age groups. All benzodiazepines cross the blood-brain barrier and bind to specific receptors in the brain; therefore, the greater the dose, the greater the affinity (46).

Although diazepam is the drug of choice to insure a night's sleep and reduce the anxiety the next day, there is a problem of dependence on the benzodiazepines and withdrawal from them. Physiological dependence indicates a state of an organism during drug treatment such that discontinuation of this treatment is followed by the development of time limited withdrawal reaction (47). Factors that contribute to the severity of withdrawal symptoms in the elderly are daily dose of bezodiazepine, duration of benzodiazepine treatment, type of taper, half-life of the benzodiazepine, baseline psychopathology, and the level of personality function (48). Another possible explanation for the withdrawal symptoms found in the elderly lies in the rate of decline in plasma levels of benzodiazepine. The rate is somewhat slower in the elderly than in younger persons and this is probably why the elderly experience less severe withdrawal symptoms than younger persons (49).

There are also some severe side effects associated with the use of the benzodiazepines. Since many of the benzodiazepines are eliminated slowly, oversedation may occur. Such sedation can produce a variety of performance deficits (50). Impaired psychomotor and psychological performance has been observed. It was found that the risk of serious traffic accidents was five times greater for the benzodiazepine users than for normal controls. Memory deficits have also been observed in the literature as a side effect of benzodiazepine use. A number of studies have established the existence of anterograde amnesic effects on long term memory. Diazepam produces such effects by acting on the process of consolidation in memory formation

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For Many Patients with Severe Erosive Esophagitis or Poorly Responsive Symptomatic GERD

Please see Brief Summary of Prescribing Information, including the Boxed WARNING, on the last page of this advertisement.

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Before prescribing or dispensing PRILOSEC™ (Omeprazole, MSD), please review the Boxed WARNING contained in the Brief Summary of Prescribing Information on the last page of this advertisement. Accordingly, PRILOSEC should be used only for the conditions, dosages, and duration specified in the Prescribing Information.

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Only the Name Has Changed

(prī´ lō sĕc)

PRILOSEC Is the New Brand Name for Omeprazole, MSD

On October 1, 1990, the brand name for Omeprazole, MSD was changed from LOSEC to PRILOSEC. Merck Sharp & Dohme has taken this action to address the potential for confusion between the brand names LOSEC and Lasix** (furosemide).

PRILOSEC is indicated for the short-term treatment (4 to 8 weeks) of patients with:

- Symptomatic gastroesophageal reflux disease (GERD/esophagitis) poorly responsive to customary treatment, usually including an adequate course of H_2 antagonist therapy
- Severe erosive esophagitis (grade 2 or above) diagnosed by endoscopy

For Acid Control Beyond H_2 Blockade, a Primary Source Is Still Omeprazole, MSD—Just Remember the New Name: PRILOSEC

For severe erosive esophagitis or poorly responsive symptomatic GERD

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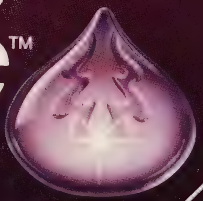

Pain Relief and Healing Beyond H_2 Blockade

*Formerly 'LOSEC®'

PRiLOSEC™
(OMEPRAZOLE/MSD)

(Formerly 'LOSEC®')

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CLINICAL PHARMACOLOGY

Mechanism of Action: Omeprazole belongs to a new class of antisecretory compounds, the substituted benzimidazoles, that do not exhibit anticholinergic or H_2-histamine antagonistic properties but that suppress gastric acid secretion by specific inhibition of the H^+/K^+ ATPase enzyme system at the secretory surface of the gastric parietal cell. Because this enzyme system is regarded as the acid (proton) pump within the gastric mucosa, omeprazole has been characterized as a gastric acid pump inhibitor, in that it blocks the final step of acid production. This effect is dose-related and leads to inhibition of both basal and stimulated acid secretion, irrespective of the stimulus. Animal studies indicate that after rapid disappearance from plasma, omeprazole can be found within the gastric mucosa for a day or more.

Antisecretory Activity: After oral administration, the onset of the antisecretory effect of omeprazole occurs within one hour, with the maximum effect occurring within 2 hours. Inhibition of secretion is about 50% of maximum at 24 hours, and the duration of inhibition lasts up to 72 hours. The antisecretory effect thus lasts far longer than would be expected from the very short (less than one hour) plasma half-life, apparently due to prolonged binding to the parietal H^+/K^+ ATPase enzyme. When the drug is discontinued, secretory activity returns gradually, over 3 to 5 days. The inhibitory effect of omeprazole on acid secretion increases with repeated once-daily dosing, reaching a plateau after 4 days.

INDICATIONS AND USAGE

Gastroesophageal Reflux Disease (GERD):
Severe Erosive Esophagitis: PRILOSEC™ (Omeprazole, MSD) Delayed-Release Capsules are indicated for the short-term treatment (4-8 weeks) of severe erosive esophagitis (grade 2 or above) which has been diagnosed by endoscopy.

Poorly Responsive Symptomatic GERD: PRILOSEC Delayed-Release Capsules are indicated for the short-term treatment (4-8 weeks) of symptomatic gastroesophageal reflux disease (esophagitis) poorly responsive to customary medical treatment, usually including an adequate course of a histamine H_2-receptor antagonist.

The efficacy of PRILOSEC used for longer than 8 weeks in these patients has not been established. In the rare instance of a patient not responding to 8 weeks of treatment, it may be helpful to give up to an additional 4 weeks of treatment. If there is recurrence of severe or symptomatic GERD poorly responsive to customary medical treatment, additional 4-8 week courses of omeprazole may be considered. THE DRUG SHOULD NOT BE USED AS MAINTENANCE THERAPY (see Boxed WARNING).

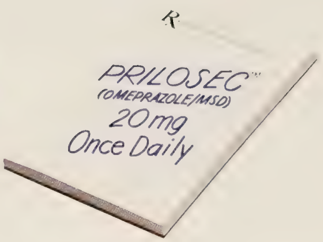
Pathological Hypersecretory Conditions: PRILOSEC Delayed-Release Capsules are indicated for the long-term treatment of pathological hypersecretory conditions (e.g., Zollinger-Ellison syndrome, multiple endocrine adenomas, and systemic mastocytosis).

CONTRAINDICATIONS

PRILOSEC Delayed-Release Capsules are contraindicated in patients with known hypersensitivity to any component of the formulation.

WARNING

In long-term (2 year) studies in rats, omeprazole produced a dose-related increase in gastric carcinoid tumors (see PRECAUTIONS, *Carcinogenesis, Mutagenesis, Impairment of Fertility*). While available endoscopic evaluations and histologic examinations of biopsy specimens from human stomachs have not detected a risk from short-term exposure to PRILOSEC, further human data on the effect of sustained hypochlorhydria and hypergastrinemia are needed to rule out the possibility of an increased risk for the development of tumors in humans receiving long-term therapy with PRILOSEC. PRILOSEC should be prescribed only for the conditions, dosage, and duration described (see INDICATIONS AND USAGE and DOSAGE AND ADMINISTRATION).



PRECAUTIONS

General: Symptomatic response to therapy with omeprazole does not preclude the presence of gastric malignancy.

Information for Patients: PRILOSEC™ (Omeprazole, MSD) Delayed-Release Capsules should be taken before eating. Patients should be cautioned that the PRILOSEC Delayed-Release Capsules should not be opened, chewed, or crushed and should be swallowed whole.

Drug Interactions: Omeprazole can prolong the elimination of diazepam, warfarin, and phenytoin, drugs that are metabolized by oxidation in the liver. Patients should be monitored to determine if it is necessary to adjust the dosage of these drugs when taken concomitantly with PRILOSEC. In clinical trials, antacids were used concomitantly with administration of PRILOSEC.

Carcinogenesis, Mutagenesis, Impairment of Fertility: In two 24-month carcinogenicity studies in rats, omeprazole at daily doses of 1.7, 3.4, 13.8, 44.0, and 140.8 mg/kg/day (approximately 4 to 352 times the human dose, based on a patient weight of 50 kg and a human dose of 20 mg) produced gastric ECL cell carcinoids in a dose-related manner in both male and female rats; the incidence of this effect was markedly higher in female rats, which had higher blood levels of omeprazole. Gastric carcinoids seldom occur in the untreated rat. In addition, ECL cell hyperplasia was present in all treated groups of both sexes. In one of these studies, female rats were treated with 13.8 mg/kg/day omeprazole (approximately 35 times the human dose) for one year, then followed for an additional year without the drug. No carcinoids were seen in these rats. An increased incidence of treatment-related ECL cell hyperplasia was observed at the end of one year (94% treated vs 10% control). By the second year, the difference between treated and control rats was much smaller (46% vs 26%) but still showed more hyperplasia in the treated group. A 78-week mouse carcinogenicity study of omeprazole did not show increased tumor occurrence, but the study was not conclusive.

Omeprazole was not mutagenic in an *in vitro* Ames *Salmonella typhimurium* assay, an *in vitro* mouse lymphoma cell assay, and an *in vivo* rat liver DNA damage assay. A mouse micronucleus test at 625 and 6250 times the human dose gave a borderline result, as did an *in vivo* bone marrow chromosome aberration test. A second mouse micronucleus study at 2000 times the human dose but with different (suboptimal) sampling times was negative.

In a rat fertility and general reproductive performance test, omeprazole in a dose range of 13.8 to 138.0 mg/kg/day (approximately 35 to 345 times the human dose) was not toxic or deleterious to the reproductive performance of parental animals.

Pregnancy: Pregnancy Category C: There are no adequate or well-controlled studies in pregnant women. Omeprazole should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether omeprazole is excreted in human milk. In rats, omeprazole administration during late gestation and lactation at doses of 13.8 to 138 mg/kg/day (35 to 345 times the human dose) resulted in decreased weight gain in pups. Because many drugs are excreted in human milk, because of the potential for serious adverse reactions in nursing infants from omeprazole, and because of the potential for tumorigenicity shown for omeprazole in rat carcinogenicity studies, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

In the U.S. clinical trial population of 465 patients (including duodenal ulcer, Zollinger-Ellison syndrome, and resistant ulcer patients), the following adverse experiences were reported to occur in 1% or more of patients on therapy with PRILOSEC™ (Omeprazole, MSD). Numbers in parentheses indicate percentages of the adverse experiences considered by investigators as possibly, probably, or definitely related to the drug.

	Omeprazole (n=465)	Placebo (n=64)	Ranitidine (n=195)
Headache	6.9 (2.4)	6.3	7.7 (2.6)
Diarrhea	3.0 (1.9)	3.1 (1.6)	2.1 (0.5)
Abdominal Pain	2.4 (0.4)	3.1	2.1
Nausea	2.2 (0.9)	3.1	4.1 (0.5)
URI	1.9	1.6	2.6
Dizziness	1.5 (0.6)	0.0	2.6 (1.0)
Vomiting	1.5 (0.4)	4.7	1.5 (0.5)
Rash	1.5 (1.1)	0.0	0.0
Constipation	1.1 (0.9)	0.0	0.0
Cough	1.1	0.0	1.5
Asthenia	1.1 (0.2)	1.6 (1.6)	1.5 (1.0)
Back Pain	1.1	0.0	0.5

Additional adverse experiences occurring in <1% of patients or subjects in domestic and/or international trials are shown below, listed by body system. In many instances, the relationship to PRILOSEC was unclear. *Body as a Whole:* Fever, pain, fatigue, malaise, abdominal swelling. *Cardiovascular:* Chest pain or angina, tachycardia, bradycardia, palpitation, peripheral edema. *Digestive:* Elevated ALT (SGPT), elevated AST (SGOT), elevated γ-glutamyl transpeptidase, elevated alkaline phosphatase, elevated bilirubin (jaundice), anorexia, irritable colon, flatulence, fecal discoloration, esophageal candidiasis, mucosal atrophy of the tongue, dry mouth. *Metabolic/Nutritional:* Hypoglycemia, weight gain. *Musculoskeletal:* Muscle cramps, myalgia, joint pain, leg pain. *Nervous System/Psychiatric:* Dizziness, vertigo, insomnia, nervousness, apathy, somnolence, anxiety disorders, paresthesia, dream abnormalities, hemifacial dysesthesia. *Respiratory:* Epistaxis, pharyngeal pain. *Skin:* Rash, skin inflammation, urticaria, pruritus, alopecia, dry skin, hyperhidrosis. *Special Senses:* Tinnitus, taste perversion. *Urogenital:* Urinary tract infection, microscopic pyuria, urinary frequency, elevated serum creatinine, proteinuria, glycosuria, hematuria, testicular pain. *Hematologic:* Agranulocytosis, pancytopenia, thrombocytopenia, neutropenia, anemia, leucocytosis.

The incidence of clinical adverse experiences in patients >65 years of age was similar to that in patients ≤65 years.

OVERDOSAGE

There is no experience to date with deliberate overdosage. Dosages of up to 360 mg/day have been well tolerated. No specific antidote is known. Omeprazole is extensively protein bound and is, therefore, not readily dialyzable. In the event of overdosage, treatment should be symptomatic and supportive.

DOSAGE AND ADMINISTRATION

Severe Erosive Esophagitis or Poorly Responsive Gastroesophageal Reflux Disease (GERD): The recommended adult oral dose is 20 mg daily for 4 to 8 weeks (see INDICATIONS AND USAGE).

Pathological Hypersecretory Conditions: The dosage of PRILOSEC in patients with pathological hypersecretory conditions varies with the individual patient. The recommended adult oral starting dose is 60 mg once a day. Doses should be adjusted to individual patient needs and should continue for as long as clinically indicated. Doses up to 120 mg t.i.d. have been administered. Daily dosages of greater than 80 mg should be administered in divided doses.

No dosage adjustment is necessary for patients with renal impairment, hepatic dysfunction, or for the elderly.

HOW SUPPLIED

No. 3440 – PRILOSEC Delayed-Release Capsules, 20 mg, are opaque, hard gelatin, amethyst-colored capsules, coded MSD 742.

Storage: Store PRILOSEC Delayed-Release Capsules in a tight container protected from light and moisture. Store between 59° F and 86° F (15° C and 30° C).

For more detailed information, consult your MSD Representative or see Prescribing Information.

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Continued from page 15.

rather than on registration or retrieval. Short term memory is also affected as is noticed when deficits on digit-span tasks are measured (51). Long term benzodiazepine use has also been associated with a general dulling and blunting of emotional response. This effect is lost when benzodiazepine treatment is stopped. In some cases, the emotional rebound effect following termination of use leads to the expression of feelings that have been dormant for a long period of time. The experience of grief regarding a loved one who died is common, especially when a bereavement was one of the original reasons for the prescription of benzodiazepines. In rare instances, the benzodiazepines have the effect of making the user feel more aggressive or antisocial. This effect is rare, but it seems to occur as a result of the disinhibition of behavior previously contained by social anxiety regarding its consequences (52). One of the most dangerous side effects of the benzodiazepines is the increased risk of falling that they create. In a case-control study in the hospitalized elderly and in a prospective study of the institutionalized elderly, "the risk of falling was increased about threefold in persons using psychoactive medications." A large case-control study of hip fractures in the elderly found that "having a prescription for a long half-life sedative doubled the risk of hip fracture" (53). Therefore, the benzodiazepines have a direct effect on the cerebellum, as shown by the frequent side effect of ataxia or loss of coordination (54).

In doing the research for this paper, I found many sources of information on the aging processes of the elderly, the pharmacokinetics and pharmacodynamics relating to the elderly, and the adverse drug reactions to which the elderly are more susceptible. I also found much information on the dependence and withdrawal of the benzodiazepines and all the side effects associated with them. But, I found only a scarce amount of information as to why the elderly are susceptible to become abusers of benzodiazepines or any prescription drug. Perhaps the real problems with the elderly have to do with the ways they are thought of, the ways in which they are treated, and the direct effect that these two aspects have on the ways in which the elderly perceive themselves. It seems to me that our society causes the elderly to have ill and unwanted feelings about themselves. We are such a "throw away" and selfish society that we do not want to be bothered with anything that gets old or rusted or slows down. They feel that they are just in the way. Very few people actually take the time to even talk to the elderly. Many times the elderly do not even need a sedative to fall asleep. If they just had someone with whom to discuss their troubles and find some workable solutions then they would be able to sleep much more easily.

ENDNOTES

1. Raffoul PR. Drug Misuse Among Older People: Focus for Interdisciplinary Efforts. *Health and Social Work*. 1986:197–203.
2. Raffoul PR. Drug Misuse Among Older People: Focus for Interdisciplinary Efforts. *Health and Social Work*. 1986:197–203.
3. Pucino F, Beck CL, Seifert RL, et al. Pharmacogeriatrics. *Pharmacotherapy*. 1985;5:314–326.
4. Pucino F, Beck CL, Seifert RL, et al. Pharmacogeriatrics. *Pharmacotherapy*. 1985;5:314–326.
5. Tsujimoto G, Hashimoto K, Hoffman BB. *International Journal of Clinical Pharmacology, Therapy, and Toxicology*. 1989;27:13–26.
6. Pucino F, Beck CL, Seifert RL, et al. Pharmacogeriatrics. *Pharmacotherapy*. 1985;5:314–326.
7. Loi CM, Vestal RE. Drug Metabolism in the Elderly. *Pharmacy Therapy*. 1988;36:131–149.
8. Weg RB. Drug Interaction with the Changing Physiology of the Aged: Practice and Potential. *Drugs and the Elderly*. 1973;71–88.
9. Stevenson IH, Salem SA, Shepherd AM. Studies in Drug Absorption and Metabolism in the Elderly. *Drugs and the Elderly: Perspectives in Geriatric Clinical Pharmacology*. 1977;51–64.
10. Loi CM, Vestal RE. Drug Metabolism in the Elderly. *Pharmacy Therapy*. 1988;36:131–149.
11. Weg RB. Drug Interaction with the Changing Physiology of the Aged: Practice and Potential. *Drugs and The Elderly*. 1973;71–88.
12. Loi CM, Vestal RE. Drug Metabolism in the Elderly. *Pharmacy Therapy*. 1988;36:131–149.
13. Stevenson IH, Salem SA, Shepherd AM. Studies in Drug Absorption and Metabolism in the Elderly. *Drugs and the Elderly: Perspectives in Geriatric Clinical Pharmacology*. 1977;51–64.
14. Pucino F, Beck CL, Seifert RL, et al. Pharmacogeriatrics. *Pharmacotherapy*. 1985;5:314–326.
15. Poe WD, Holloway DA. Metabolism and Pharmacokinetics. *Drugs and the Aged*. 1980;6–10.
16. Pucino F, Beck CL, Seifert RL, et al. *Pharmacogeratrics*. Pharmacotherapy. 1985;5:314–326.
17. Loi CM, Vestal RE. Drug Metabolism in the Elderly. *Pharmacy Therapy*. 1988;36:131–149.
18. Loi CM, Vestal RE. Drug Metabolism in the Elderly. *Pharmacy Therapy*. 1988;36:131–149.
19. Poe WD, Holloway DA. Metabolism and Pharmacokinetics. *Drugs and the Aged*. 1980;6–10.
20. Weg RB. Drug Interaction with the Changing Physiology of the Aged: Practice and Potential. *Drugs and the Elderly*. 1973;71–88.
21. Loi CM, Vestal RE. Drug Metabolism in the Elderly. *Pharmacy Therapy*. 1988;36:131–149.
22. Weg RB. Drug Interaction with the Changing Physiology of the Aged: Practice and Potential. *Drugs and the Elderly*. 1973;71–88.
23. MacLennan WJ, Shepherd AN, Stevenson IH. The Effect of Aging on Pharmacokinetics and Pharmacodynamics. *The Elderly*. 1984;1–10.
24. MacLennan WJ, Shepherd AN, Stevenson IH. The Effect of Aging on Pharmacokinetics and Pharmacodynamics. *The Elderly*. 1984;1–10.
25. Loi CM, Vestal RE. Drug Metabolism in the Elderly. *Pharmacy Therapy*. 1988;36:131–149.
26. Tsujimoto G, Hashimoto K, Hoffman BB. Pharmacokinetic and Pharmacodynamic Principles of drug Therapy in Old Age. *International Journal of Clinical Pharmacology, Therapy, and Toxicology*. 1989;27:13–26.
27. Pucino F, Beck CL, Seifert RL, et al. Pharmacogeriatrics. *Pharmacotherapy*. 1985;5:314–326.
28. O'Malley K, Nolan L. Adverse Drug Reactions in the Elderly. *British Journal of Hospital Medicine*. 1989;41:446–456.
29. O'Malley K, Nolan L. Adverse Drug Reactions in the Elderly. *British Journal of Hospital Medicine*. 1989;41:446–456.
30. Hershey LA. Avoiding Adverse Drug Reactions in the Elderly. *The Mount Sinai Journal of Medicine*. 1988;55:244–249.
31. Kurfees JF, Dotson RL. Drug Interactions in the Elderly. *The Journal of Family Practice*. 1987;25:477–482.
32. Hershey LA. Avoiding Adverse Drug Reactions in the Elderly. *The Mount Sinai Journal of Medicine*. 1988;55:244–249.
33. Kurfees JF, Dotson RL. Drug Interactions in the Elderly. *The Journal of Family Practice*. 1987;25:477–482.

34. O'Malley K, Nolan L. Adverse Drug Reactions in the Elderly. *British Journal of Hospital Medicine*. 1989;41:446–456.
35. Pucino F, Beck CL, Seifert RL, et al. Pharacogeriatrics. *Pharmacotherapy*. 1985;5:314–326.
36. O'Malley K, Nolan L. Adverse Drug Reactions in the Elderly. *British Journal of Hospital Medicine*. 1989;41:446–456.
37. Raffoul PR. Drug MisUse Among Older People: Focus for Interdisciplinary Efforts. *Health and Social Work*. 1986;197–203.
38. Fancourt G, Castleden M. The Use of Benzodiazepine with Particular Reference to the Elderly. *British Journal of Hospital Medicine*. 1986;321–325.
39. Fancourt G, Castleden M. The Use of Benzodiazepine with Particular Reference to the Elderly. *British Journal of Hospital Medicine*. 1986;321–325.
40. Greenblatt DJ, Shader RI. Clinical Pharmacokinetics of the Benzodiazepines. *The Benzodiazepines: Current Standards of Medical Practice*. 1985;43–58.
41. Grantham P. Benzodiazepine Abuse. *British Journal of Hospital Medicine*. 1987;292–299.
42. Woods JH, Katz JL. Use and Abuse of Benzodiazepines. *Journal of the American Medical Association*. 1988;260:3476–3479.
43. Grantham P. Benzodiazepine Abuse. *British Journal of Hospital Medicine*. 1987;292–299.
44. Ciraulo DA. Abuse Potential of Benzodiazepines. *Bulletin of New York Academy of Medicine*. 1985;8:728–735.
45. Greenblatt DJ, Shader RI. Clinical Pharmacokinetics of the Benzodiazepines. *The Benzodiazepines: Current Standards of Medical Practice*. 1985;43–58.
46. Greenblatt DJ, Shader RI. Clinical Pharmacokinetics of the Benzodiazepines. *The Benzodiazepines: Current Standards of Medical Practice*. 1985;43–58.
47. Cook PJ. Benzodiazepine Hypnotics in the Elderly. *Acta Psychiatr. Scand. Suppl.* 1986;74:149–158.
48. Cook PJ. Benzodiazepine Hypnotics in the Elderly. *Acta Psychiatr. Scand. Suppl.* 1986;74:149–158.
49. Woods JH, Katz JL. Use and Abuse of Benzodiazepines. *Journal of the American Medical Association*. 1988;260:3476–3479.
50. Ciraulo DA. Abuse Potential of Benzodiazepines. *Bulletin of New York Academy of Medicine*. 1985;8:728–735.
51. Fancourt G, Castleden M. The Use of Benzodiazepines with Particular Reference to the Elderly. *British Journal of Hospital Medicine*. 1986;321–325.
52. Fancourt G, Castleden M. The Use of Benzodiazepines with Particular Reference to the Elderly. *British Journal of Hospital Medicine*. 1986;321–325.
53. Sorock GS, Shimkin EE. Benzodiazepine Sedatives and the Risk of Falling in a Community-Dwelling Elderly Cohort. *Journal of Internal Medicine*. 1988;148:2441–2444.
54. Sorock GS, Shimkin EE. Benzodiazepine Sedatives and the Risk of Falling in a Community-Dwelling Elderly Cohort. *Journal of Internal Medicine*. 1988;148:2441–2444.

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Institutional Forum

Long-Term Care: Problems and Opportunities

Peter P. Lamy, Ph.D., Sc.D.

ABSTRACT

I. Major Problems:
- Technology and its role in long-term care
- The continuing focus on cost and payments and their relation to quality of care
- Equal access for elderly to primary care both in urban and rural areas
- Availability of properly trained personnel and their function

II. The following assumptions are made regarding government's responsibilities in the prescription drug market. (Anderson GM et al: Clin Pharmacol Ther 48:111, 1990)

1. the health status of the population should be the paramount concern of government when it is evaluating its role in the prescription drug marketplace;
2. resources are limited and governments must make every effort to allocate those resources wisely and;
3. ensuring equitable access to effective health care services is a fundamental aspect of government's involvement in health care.

III. The issue of how to get paid dominates the health care landscape and will continue to do so.

IV. There will be a deeper understanding of the role of healthcare data. Data is the language of healthcare services.

V. The 1990's:
- Will be a balancing act between care and cost
- Will be the decade of the development of the sharing of health care responsibilities
- Even severely ill patients may be maintained at home if there is a "fit" between home environment and patient
- Across all sectors of long-term care, appropriateness criteria for drugs will be in effect
- Outcome oriented care will be the driving force
- The hierarchial system of health care delivery will face decline
- A patient-centered approach will replace the doctor-centered system

Introduction

Since the late 1970's, US health care and expenditures associated with it have increased dramatically, accounting currently for approximately 12% of the Gross National Product (GNP). The health care field is now dominated by sophisticated technology-intensive acute care and very costly long-term care provided mainly in nursing home settings. Alternate care sites (Assisted Living, Home Health) are slowly emerging. A substantial burden associated with many health care problems is related to life-style issues.

Although the public apparently favors the advances available with expanded health care services, it seems to be unwilling (and, more and more unable) to pay the high price for these services. This paradox has encouraged a shift from traditional policies which encouraged growth without concern for efficiency, promoted equal access through a number of government-sponsored programs, and regulated the health care industry. There is emerging a competitive, free-market system of financial incentives for increasing efficiency, reliance on voluntary mechanisms to control quality and access, and a strict cost-containment approach. These recent policies have encouraged aggregation of health resources and the development of a health care-industrial complex of hospital chains and vertical monopolies over ambulatory, home health, and institutional long-term care services. Yet, health care costs have risen more than 10% in 1988, twice the rate of inflation. Health care costs now stand at approximately $2,100/person/year.

The rapid growth of the oldest age group will have a major impact on future health care costs, particularly for Medicare, nursing homes, hip fracture, and dementia. Without major changes in the health of our older population, these health care costs will escalate enormously, in large part as a result of the projected growth of the oldest old. Success in one area of health care may well lead to worsening in another patient population. For example, declines in mortality from heart disease in the young–old could lead to survival of a population at risk for developing Alzheimer's disease.

Moreover, life expectancy in the United States has never been higher (disparities remain between whites and blacks). Overall U.S. life expectancy rose to 75 years, according to 1987 data as reported by the Centers for Disease Control. That was up 0.2 years (about 73 days) from 1986. This means that someone born in 1987 would live, on the average, 75 years. Women, on the average, outlive men 6.9 years. Americans can now expect to live about 12 years longer than they could have expected 50 years ago; the life expectancy rate was 62.9 in 1940.

By 2020, the elderly population (65 and over) is expected to reach 52 million, and by 2030 it is expected that there will be 65.6 million elderly. The 85-plus population is expected nearly to triple in size between 1980 and 2030 and to be five times larger in 2050 (15.2 million) than in 1980.

On the average, the annual cost of medical care for someone aged 65 or over now exceeds $5,000, of which only about half is covered by Medicare, according to the 1990 report of the Joint Economic Council of the U.S. Congress. Even after payments by private insurers and Medicaid, elderly patients on the average pay about $1,250 per year out of pocket (1).

Out-of-pocket health care expenses for America's elderly have jumped from 12.3% of their mean incomes in 1977 to 18.2% in 1988, according to a new report from the U.S. House Select Committee on Aging. The proportion is well above what older adults paid directly before Medicare and Medicaid were enacted in 1965 (2).

Only about 5 percent of the elderly population are in nursing homes at any given time, but many more will live in nursing homes during their lifetime. The risk of institutionalization at age 65 is widely debated, with recent estimates ranging from 36 percent to 65 percent. The lifetime risk of institutionalization for women at age 65 has been estimated at 52 percent and that for men at 30 percent.

The Employee Benefit Research Institute indicates that costs exceed $25,000 a year for nursing home care and are even greater for a similar level of home care assistance (3).

It is widely believed that the current system of cost-based, retrospective payment for Medicare home health services lacks mechanisms and incentives for containing overall costs and efficiently providing the necessary services to Medicare beneficiaries, and other methods of payments are being explored (4).

Several models are extant in the United States, attempting to circumvent the problem of spiraling cost. One might mention the "failed" models in Massachusetts and California. A drastic approach is being advocated in Oregon, which proposes to limit reimbursement for health care costs (in the area of mental disorders, for example) and to the poor. At the other end of the spectrum is Hawaii, where an almost Universal Health Insurance model appears to be successful. Still problems continue in the Long-Term Care Industry.

The long-term care industry now cares for approximately 1.5 million elderly in nursing homes, perhaps one million in the Assisted Living Sector, and four to five million in various home health settings. To varying degrees, evaluation of these services have shown significant shortcomings.

The Inspector General, Department of Health and Human Services, Richard Kusserow, addressed drug use for the elderly, and reported that there " is a widespread problem of mismedication among older adults . . . the problem of mismedication reflects a series of systemic weakness throughout the drug therapy delivery system . . . and the problem is likely to grow" (5). A recent hearing of the Subcommittee on Human Services of the Select Committee on Aging of the House of Representatives agreed with these findings (6).

Both houses of Congress have intermittently addressed the need to upgrade services offered to elderly nursing home residents. Recently, several reports regarding assisted living have classified "board and care homes in America a national tragedy" (7,8). The most recent report addressed the appropriateness of acute medical care for the elderly (9):

> "It is reasonable to state that virtually every study included in this review found at least double-digit levels of inappropriate care. Studies that looked at overuse in the hospital—of procedures or of medications—found evidence of such overuse in amounts too large to be ignored. In particular, perhaps as much as one-fifth to one quarter of acute care hospital services or procedures were felt to be used for equivocal or inappropriate reasons, and two-fifths to one-half of medications studied were overused in outpatients."

Clearly, in spite of or even, perhaps, because of the changes in the US health care system, major problems remain in the care of the elderly, particularly in long term care. It is suggested that new regulations (such as OBRA 1987) alone will not be able to address these shortcomings efficiently and effectively.

THE 1990s

In this decade, there will be many changes in the rules of the health care game for providers, payers, and patients. Changes will come from the "man in the street", worried about the high costs of health care and worried that there won't be the means to pay for it. Among the major problems that will be addressed:

- Technology and its role in long-term care
- The continuing focus on cost and payments and their relation to quality of care
- Equal access for elderly to primary care both in urban and rural areas
- Availability of properly trained personnel and their function

Currently, there is almost an infatuation with high technology, perhaps mainly because technology is thought to be necessary by hospitals and others to stay competitive. Certainly, its role in sustaining life will be re-evaluated. The focus on cost and payments will continue. As providers struggle with rising costs and increasing numbers of uninsured patients (currently more than 60 million Americans are not insured), the issue of how to get paid dominates the health care landscape and will continue to do so. This is a genuine problem for providers, but sometimes overshadows the humanistic side of health care. It can color who get care, the type of care provided, and the choice of medication. On the other hand, it has been suggested that the problem of uncontrolled costs has been "solved" literally on the back of health care consumers, whose premiums have risen sharply and may now be out of reach for many elderly. No doubt, there will be more efforts to control the cost of care via control of providers.

The issue of personnel in long-term care is critical and will become more so. Right now, wages for personnel in nursing homes are 15 to 45% below wages offered in hospitals, clearly a disincentive to seek employment in nursing homes. Moreover, turf battles still exist and seem to sharpen. There is an urgent need for resolution of these disagreements. For example, there will be clarification of the roles of the nutritionist and the dietitian.

There is no dearth of proposals to address these and other issues. The American Medical Association has proposed a national health plan (Health Access America). The American College of Physicians backs a universal, single-payer policy. Rep. Fortney Stark (D-Cal), who thinks that no national health plan has a chance to pass this year or for a long time to come, intends to introduce a new national health insurance and long-term care plan that will cost more than $100 billion a year. It will make the federal government the single payer for healthcare insurance so that it has leverage to control costs.

There are the proposals from the Pepper Commission, and there is Rep. Grandy's (R-Iowa) plan called

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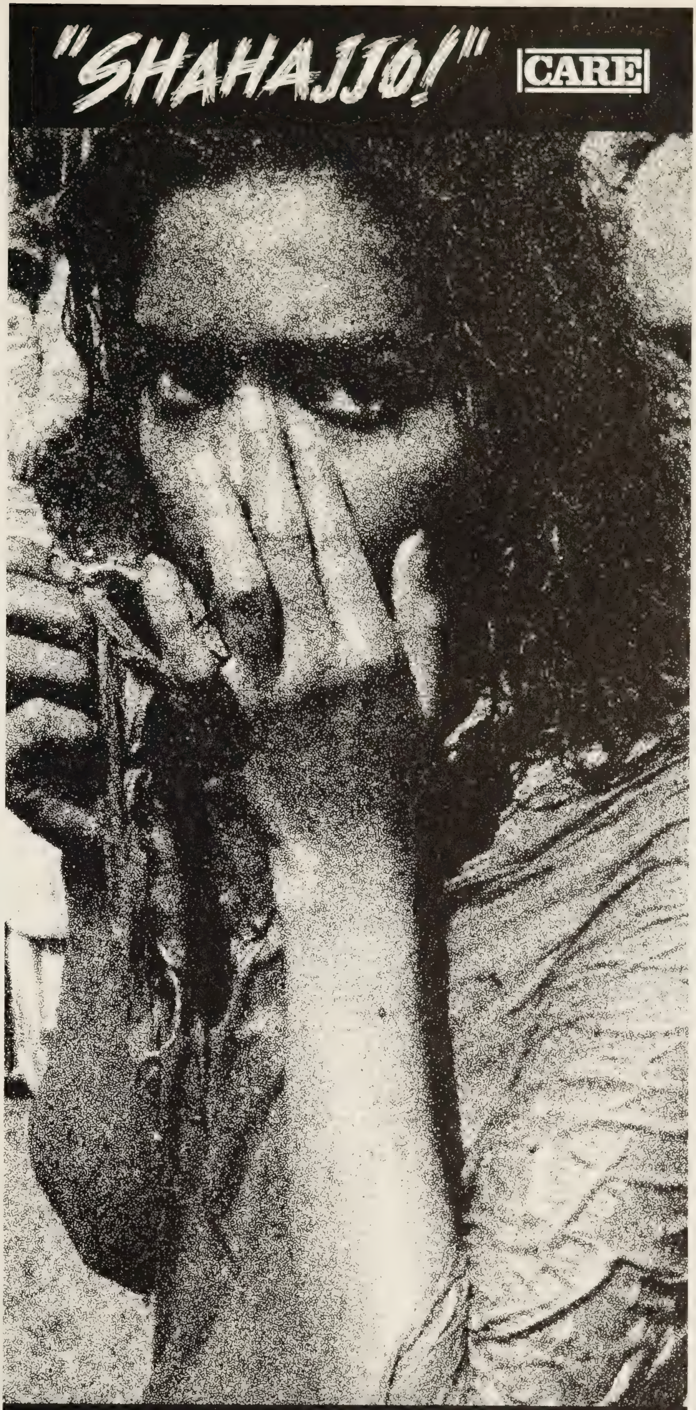

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"Health-Care Empowerment and Access Legislation" (HEAL). Billed as an alternative to the Kennedy/Waxman bill, it is essentially a "carrot-and-stick" approach to American employers. There is, of course, Sen Pryor's (D-Ark) bill, named PAPPA, the Pharmaceutical Product Access and Prudent Purchasing Act of 1990.

Controlling Medicaid costs has been a lingering concern in all states for some time. Control of these costs has been characterized as the biggest problem state budget directors will face in the 1990s. Overall cost of the medicaid program was more than $50 billion in 1989, of which the states paid 42%. Yet, there are 12 active federal court suits by hospitals and nursing homes against states for Medicaid reimbursement that is "reasonable and adequate to meet the costs . . . by efficiently and economically operated facilities" and more suits are expected in the area of physician payments.

In an effort to protect Medicaid-eligible consumers, eight states plan to try linking commercial insurance with the government's Medicaid program so that families can avert bankruptcy when a family member needs long-term care. Under these programs, the amount of a patient's assets covered by private insurance need not be liquidated when Medicaid picks up the nursing home tab.

In a historic move, the Bush administration sent to Congress a proposal for a drastic revision of Medicare fees, the first step in establishing a nationwide fee-scale covering more than 7,000 physician services. The precise and detailed fee schedule would take effect in January 1992, bringing about unprecedented government control over the bills that are charged by the 500,000 physicians who treat Medicare beneficiaries. In brief, surgeons would get less, primary care providers more.

It is very reasonable to suggest, though, that the impact of two other developments will outpace the impact of all other proposals.

First is last year's (1989) Outcomes Assessment Research Act, in which Congress appropriated almost $600 million for five years. Vast variations exist in the health care Americans receive, in the form of frequency of medical treatments, in risks, benefits, costs and quality of care. Managed care is now moving to understand and reduce these variations by measuring the results medical treatments produce, i.e. their outcomes. Outcome-oriented and controlled care will be the driving forces of the 1990s.

This effort will be supported and complemented by a deeper understanding of the role of healthcare data. Data is the language of healthcare services. Quality will be measured more and more in outcomes and utilization of health care services. Both have their roots in data. Cost-effectiveness is measured in cost-benefit ratios, which are also based on data. "Value" is the sum of quality and cost (perhaps also access) and, thus, even value will be derived objectively. The only exception is still quality of life, sometimes expressed as quality-adjusted life-years, a measure which is still very subjective. The 1990s will find many efforts to measure this important factor objectively.

In summary, then, the 1990s will be a balancing act between care and cost, but, more importantly, the 1990s will be the decade of the development and implementation of the sharing of health care responsibilities.

Specific Questions for the 1990s

The Role of Pharmaceuticals in Different Long-Term Care Settings:

The role of pharmaceuticals will change in parallel with new approaches to long-term care. There will be enhanced realization of the fact that the etiologies of disease, disability, and handicap are both physical (medical) and social in nature, and that a singular medical approach will simply not work. Severity of illness will no longer be the determining factor in placement of patients in various sectors of long-term care. Even severely ill patients may be maintained at home if there is a "fit" between home environment and patient. What will predominate as the deciding factor is the patient's functional status. In short, the question as to which environment is most supportive of the patient's functional status will be decisive. There will be a judicious mixture of the use of drugs, assistive devices, technology, and non-pharmacologic approaches.

Across all sectors of long-term care, appropriateness criteria for drugs will be in effect and providers will have to document why a particular drug was thought to be appropriate for a particular patient.

Across all sectors, the use of drugs used for prevention, such as pneumonia and flu vaccines will also be the same. Differences will clearly emerge in the area of health outcomes and quality of life issues. For chronic diseases, health outcomes must be adjusted for age, race, sex, and differing durations of therapy. Importantly, adverse drug reactions must be observed and reported explicitly, for they may be acute, limited, or engender further chronic illness.

Expectations of outcomes will differ for the different sectors of long-term care, and with it the use of drugs. In nursing homes, quality of life may be the deciding factor, while in home care, there will be major efforts, via drug therapy, to restore to the patient as much functional ability as possible. The use of certain drugs will differ. We already know that some narcotic analgesics produce side effects, possibly leading to falls, in elderly ambulatory but not bed-bound patients. Drugs with a very narrow therapeutic index, which would need to be monitored closely, may be used more often in the more structured sectors of long-term care. One must remember that the Royal College of Physicians quite some time ago already noted that one of the major reasons for adverse drug reactions is poor supervision of drugs used in long-term care.

Dosage forms may very well differ in the various sectors. Some, like the newly developed portable glucose sensor attached to an insulin pump or the electrically powered transdermal patch, may well be used only for ambulatory patients. More transdermal and transmucosal drug delivery systems will be available, because they are easily administered. For severely ill patients, residing in nursing homes, there will be new dosage forms. These would be small spheres exhibiting different release characteristics. This would permit a more flexible dose to be developed, calculated by computer and based on patient characteristics. This would help to avoid overuse and adverse drug effects, by allowing the dose to be tailored closely to an individual patient's needs.

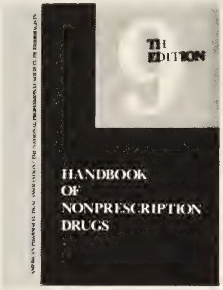
How Might the Development of New Pharmaceutical Treatments Change the Role of the Family, Physician, Nurse, Pharmacist, Pharmaceutical Manufacturer and Patient in Long-Term Care:

It is not only new pharmaceuticals that will change many of the functions of providers and patients, it is the development process of these pharmaceuticals that will be a factor in the change. While the newly FDA-enacted guidelines for testing of drugs likely to be used in the elderly (10) will help in assuring that more safety and effectiveness data will be available, they go only half-way. On the other hand, the draft of the Proposed Guidelines for the Clinical Evaluation of Antihypertensive Drugs, also proposed by the FDA (11) will help a great deal. For at least one category of drugs, the antihypertensives, there will be a minimum effective dose, maximal dose, dose ranges, and other data, which may not have been available up to now. Clearly, those prescribing and taking these drugs will be helped immensely. Furthermore, in the future, in this decade, health economists will be much earlier and much more closely involved in the development of trial methodology to value a drug's contribution to an individual's lengthened life-span and to compare this effect to the drug's potential contribution to society at large. All of this is of major importance, since of the approximately 200 drugs approved by the FDA between 1976 and 1985, more than half caused serious reactions that were not detected until several years of widespread use had passed. Many of these adverse reactions had the potential for causing death or severe disability, including heart failure, anaphylactic chock, convulsions, kidney and liver failure, severe blood disorders, and blindness (12). Right now, there are questions about a widely prescribed antidepressant, one of the newer antihistamines, and even widely used non-prescription drugs such as bulk laxative and a sustained release cholesterol-lowering agent. So, there will be safer drugs and, likely, more effective drugs that can be better targeted to an individual's needs. All of these developments will create less of a doctor-centered system and a growth in a patient-centered system.

Patient and caregiver, viewed as one, will have much more responsibility and flexibility, given increased support (for example, respite care). Furthermore, caregivers other than family (friends, neighbors) ought to be able to receive training in drug administration and monitoring of drug effects, so far denied them because of potential legal liability.

Videotapes of potential treatments and their outcomes can aid in documenting outcome, in follow-up care, and in involving patients in their decision-making. By providing patients / caregivers with information about different treatments that could be used, including possible complications and outcomes, these problems will clearly give patients a larger role in the decision-making process.

Surgery, as we know it today, is becoming less and less common. For some problems for which surgery is



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used extensively (gall bladder removals or prostatectomies, for example), there will be drugs that may obviate the need for surgery. Drugs are already available that will dissolve gall stones or shrink the prostate. More than likely, coronary bypass surgery will be displaced by drugs, and the emergence of thrombolytic therapy, i.e. drugs that break up arterial clots, has already altered the standard for treatment of heart attacks.

Primary care physicians, receiving more attention via altered Medicare payments, will be able to spend more time with their patients to explain their drugs and what to look for and expect. In short, the cognate area of health care will be highlighted, clearly helping both physicians and nurses in their approach to the patient. Will nurses' duties change? The question that should be asked: will nurses be there? Unless the long-term care sector is made much more attractive to nurses, there will be fewer and fewer entering this so important field. Nurses must have a personal stake in the outcome, and, in parallel to that, sufficient responsibility to affect this outcome. There will be major changes in the pharmacist's role, mainly toward the role of expert in pharmacotherapeutics. Moreover, there will be a third class of drugs, the non-prescription drugs. While already between 40 and 80% of all drugs used in various sectors of the long-term care field are non-prescription drugs, the switch of prescription to non-prescription drugs seems to be accelerating but, according to former FDA Commissioner Dr. Young, physicians still poorly correlate prescription and non-prescription drug use. In Pennsylvania, the sale of a certain cough syrup will probably be restricted to pharmacies only, and, given the complexity of drug regimens and the sophistication of new drugs and their potential interactions with non-prescription drugs, the third class of drugs will be restricted to sale in pharmacies only.

Finally, all health care professionals will be affected by a change in the traditional hierarchial medical system. It has been clearly documented that an interdisciplinary approach is most effective in long-term care, and that change must be accelerated, given the new and sophisticated drugs that will be available.

What Solutions to the Problems of Medication Misuse in Long-Term Care Environments Appear Feasible:

In order to answer this question, one ought to look to the past. In 1978, it was estimated that only 10 to 20% of all procedures then used in medical practice had been shown to be efficacious in controlled trials, according to a report by the US Office of Technology Assessment. In the intervening 12 years, many other agencies and professional groups have initiated similar reassessments whose results were widely reported. A 1987 study by the Rand Corporation and the UCLA School of Public Health found, though, that current means of educating physicians about new findings (courses, medical journals, etc.), had little effect upon reducing the use of outmoded practices. In a similar vein, the Annual FDA Report on Adverse Drug Reactions shows that adverse drug reactions appear to increase (perhaps an artifact of better reporting) rather than decrease, despite massive programs in geriatric pharmacotherapy. Thus, education, offered in whatever form, does not seem to meet the needs. A National Formulary, as proposed by Sen Pryor, will not help, especially since that formulary is planned to be designed only for cost-containment. In any case, there is considerable doubt that there will be a National Formulary. Whatever approach is used or suggested, it must be recognized that misuse of drugs occurs at all levels: by the pharmaceutical manufacturer who markets drugs without a clear idea of what the pharmacologic basis for the drug's action is or without a suggested minimum dose for elderly, by the FDA which is in the process of re-assessing its approval process, by the prescriber, by nurses, pharmacists, patients, and caregivers. Medication misuse is an all-pervasive issue and must be approached differently than has been done before.

Expert (artificial intelligence) systems might help. But, while these systems' potential to critique treatments is generally lauded, physicians still fear a time when the system may be called upon to make suggestions or provide solutions. This example is cited to highlight the sensibilities (and, perhaps, turf issues) that stand in the way of effective means or programs that would reduce medication misuse.

For example, the proposed Catastrophic Health Insurance bill mandated drug use review by pharmacists, but did not permit the pharmacist to gather the necessary data for the most effective review possible. In many states, Medicaid data are reviewed, but cannot be reported in certain ways. What is instituted is often a half-way measure. An example is the Texas Medicaid Ulcer Therapy Monitoring Program. Briefly, when a pharmacist receives a prescription for an anti-ulcer drug with a dose reflecting acute use, the pharmacist will have to call an 800 number connected to a computer. If the computer indicates that the patient has received the medication for two months or more, then the pharmacist must call the prescriber and suggest a switch to a maintenance dose. If the physician declines to reduce the dose, that decision must be justified in writing.

Indeed, the Inspector General of the Department of Health and Human Services has suggested a key role for the pharmacist in promoting safe and effective drug therapy for elderly. Congress, in 1974, mandated drug regimen review of all residents in nursing homes by pharmacists. Possibly the most effective way to reduce medication misuse is the expansion of this role, found effective by the Comptroller General some time ago, to all sectors of the long-term care field. This process can be considerably enhanced if prescribers, just as in the Texas case, would be asked to reply and justify their decision if they disagree with a recommmendation.

Furthermore, a most necessary ingredient in any process designed to reduce medication misuse is payment for those who counsel patients and caregivers, very similar to the proposed changes in reimbursement of certain physician services under Medicare. Counseling of patients/caregivers is a time-consuming and recurring process, and it should be recognized as an essential part of medication management in long-term care.

How can the Financing System Encourage Improvements in the Quality of Long-Term Care:

Quality is inevitably linked to cost and quantity of care. Unquestionably, adverse drug reactions rise exponentially with the number of drugs prescribed for a particular patient. In the past, lip service has been paid to quality of care, while cost issues have been addressed vigorously and, in many instances, unsuccessfully. Success has eluded the system perhaps because efforts were not well supported or were instituted without careful enough planning. Two examples will suffice. The DRGs were to contain costs of hospitals, yet the state in which DRGs originated, New Jersey, is seriously considering a new approach. DRGs, at least in part, have been responsible for the massive decline of rural hospitals and, therefore, access to care for many elderly. Quite some time ago, approximately 3,500 drugs products were classified as "less-than-effective", yet in 1989, Medicaid still supported the use of these products by approximately $30 million in reimbursements, clearly a cost and quality of care issue. Currently, there is much debate and action regarding a Medicaid rebate program. Several pharmaceutical manufacturers have offered deep discounts to several states, but voices have been raised that this may not be as cost-effective as may appear at first look and that quality of care may well suffer.

New ways will have to be found to harness the financing system to quality of care. There will have to be developed a system of disincentives and incentives, based on reimbursement, that will have to be strictly enforced. The approach to "unnecessary drugs" by OBRA 1987 may be a beginning. To eliminate bad-quality drug use and inappropriate use, aside from waste, the incentives will have to be changed. Perhaps, the Group Health Cooperative of Puget Sound might serve as a starting example. It has considerable governance by patients.

There will be a very close look at diagnostic and therapeutic procedures, i.e. drug use, and the need for them. This will have to be accomplished in several different ways. First, second opinions would help. The consultant pharmacist's role, now only retrospective, could be expanded to a prospective role in certain instances, given the appropriate reimbursement. This would be difficult, because of turf issues, but certainly not impossible. Drug utilization review, to establish a data base that will yield continuous data on drug use, should be supported, both retrospectively and prospectively. Most importantly, the data collected should be used to establish incentives and disincentives, so that outcomes regarding quality of care can be enhanced. Much is being written

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about the need to discontinue drugs given to elderly, but procedures to accomplish that successfully are not clear. Funding should be available to study this important issue. In the meantime, individual efforts should be financially supported. Most important, though, is financial support for counseling of patients and caregivers, an area that is not supported at all at this time. All efforts in diagnosis, selection, prescribing and administering a drug for a particular patient are, ultimately, bound to fail unless the patient agrees to a regimen, understands the regimen, its purpose and proposed outcome, and thus will actively participate in a proposed therapeutic approach.

Given agreeement between patient/caregiver and provider, there is still then the potential problem of a patient's ability to follow a regimen. This, in many instances, can be enhanced by compliance packaging. Its effectiveness has been established by studies within the Veterans Administration system, yet neither Medicare nor Medicaid will pay for it. It is important that payment for this type of packaging be seriously considered to enhance quality of care and the potential for the desired therapeutic outcome.

REFERENCES

1. Joint Economic Committee: The 1990 Joint Economic Report. Main Office, Dirksen Office Building, Room G-01, Washington, DC, 1990
2. Select Committee on Aging: Emptying the Elderly's Pocketbooks. Select Committee on Aging, Washington, DC, 1990
3. Friedland R; Facing the Costs of Long-Term Care. Employee Benefit Research Institute, Baltimore, MD, 1990
4. Health Care Financing Administration: Report to Congress: Demonstrations and Designs of Alternative Reimbursement Methods for Home Health Services. #017-060-00312-0. US Government Printing Office, Washington, DC 1990
5. Kusserow R; *Medicare Drug Utilization Review*. Office of the Inspector General, Department of Health and Human Services, Washington, DC, 1989
6. Subcommittee on Human Services, Select Committee on Aging, House of Representatives: *Drug Use and Misuse among the Elderly*. US Government Printing Office, Washington, DC, 1989
7. Subcommittee on Health and Long-Term Care, Select Committee on Aging, House of Representatives: *Board and Care Homes in America: A National Tragedy*. US Government Printing Office, Washington, DC, 1989
8. US General Accounting Office: *Board and Care: Insufficient Assurance that Residents' Needs are Identified and Met*. Human Resources Division GAO/HRD-89-50, Washington, DC, 1989
9. Brook RH, Kamberg CJ, Mayer-Oakes A et al: *Appropriateness of Acute Medical Care for the Elderly*. An analysis of the literature. Rand Corporation, 1989
10. US Dept of Health and Human Services: Guidelines for the Study of Drugs likely to be used in the Elderly. Food & Drug Administration, Center for Drug Evaluation and Research, Rockville, MD, 1989
11. Draft of the Proposed Guidelines for the Clinical Evaluation of Antihypertensive Drugs. Food & Drug Administration, Division of Cardio-Renal Products, Rockville, MD, 1989
12. FDA Drug Review: Post-Approval Risks 1976–85 (GAO/PEMD-90-15). US General Accounting Office, Gaithersburg, MD, 1990

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Presented at the Forsight Seminar on Pharmaceutical Research and Development, Institute for Alternative Futures, Washington, DC. Sept. 10, 1990.

DRUG PRODUCT QUALITY
Review
A PUBLICATION OF THE USP DRUG PRODUCT
PROBLEM REPORTING PROGRAM

No. 14

SEEING RED?

Pharmacists frequently notice color changes in drug products that may lead them to question the integrity of the product. In the past three years, more than 500 USP Drug Product Problem Reports described the problem to be some sort of color change or color variation between dosage units.

Sometimes the removal of a coloring agent from a product may be the reason for a color change. For example, in a final rule published in the *Federal Register* on February 1, 1990, the Food and Drug Administration (FDA) banned the use of Erythrosine Sodium, more commonly known as FD&C Red No. 3, for use in coloring cosmetics and externally applied drugs, and for all uses of its lakes, after January 29, 1990. Erythrosine had been provisionally allowed to continue in drugs and cosmetics pending completion of laboratory studies to establish its safety. Studies showed carcinogenicity in rats after chronic feeding of the dye. Thus, in an effort to protect public health, FD&C Red No. 3 and its lakes were removed from the list of approved color additives, or "delisted" for use for these purposes.

• • •

USP REVIEW

Aside from the effects of the removal of this color from numerous products, the delisting will affect commonly used products containing Erythrosine as an "active" ingredient. The current *USP-NF* contains monographs for Erythrosine Sodium, Erythrosine Sodium Topical Solution, and Erythrosine Sodium Soluble Tablets. The FDA has requested that the USP Committee of Revision delete these monographs, as the products will no longer be available in the United States.

Because the FDA did not view this as an acute hazard to public health, no recall of products containing this dye was warranted. Products manufactured prior to January 29, 1990, may remain in distribution since the effect of this change only impacts products manufactured after January 29, 1990. Any food, drug or cosmetic product manufactured with FD&C Red No. 3 lakes after this date will be considered by the FDA to be "adulterated" under sections 402, 501,and 601 of the Food, Drug and Cosmetic Act. Drugs for internal use containing FD&C Red No. 3 are not yet affected.

The practicing pharmacy community has seen the effects of this change. The FDA is aware that sources for alternative color additives and alternative labeling may be scarce due to a sudden increase in demand. Therefore, as an interim measure, it is permissible for manufacturers/labelers to continue to use product labels that claim the presence of an "artificial color", or more specifically FD&C Red No. 3 or its lakes, even though the products are formulated without the dye. The FDA authorized this practice until revised labeling is in adequate supply to replace current labeling, or until January 29, 1991, whichever comes first.

As USP pointed out to pharmacists in *USP Drug Product Quality Review* No. 10, manufacturers/labelers are not required by law to advise the buyer of a change in appearance of a dosage form. Therefore, it will take an observant pharmacist to note any change in appearance in medications when dispensing. Patients should be alerted to color differences resulting from these formulation changes. Pharmacists should keep in mind that changes in color may also occur in cosmetics.

In the interim, if there are any questions about the presence or absence of dye in a formulation, USP recommends that pharmacists contact the product manufacturer.

To report problems with drug products, or for further information, contact the USP DPPR Program at 1-800-638-6725.

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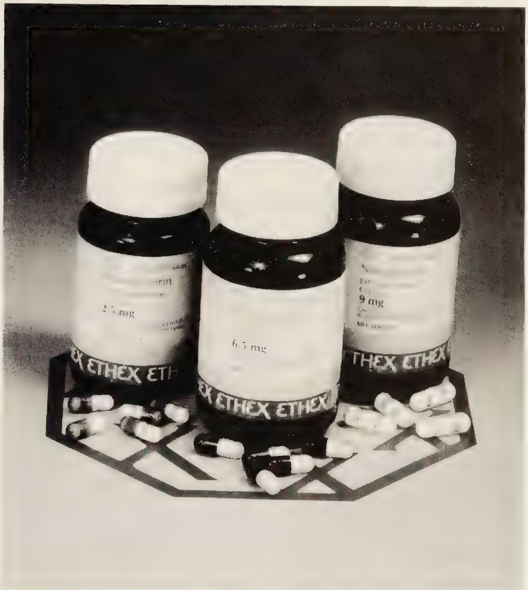
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The Ethex Corporation has announced the addition of nitroglycerin extended-release capsules in 2.5mg, 6.5mg and 9mg strengths to their product line. Ethex is a specialty generic drug marketing firm based in St. Louis, MO.

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Continuing Education Quiz

The Maryland Pharmacist NOVEMBER 1990

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by April 1, 1991. A continuing education certificate for one contact credit will be mailed to you within 30 days. Please type or print clearly.

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Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? ____________ minutes

External Analgesic Products

1. Which of the following is reported to be the most potent (i.e., listed in Group A) counterirritant?
   a. Camphor
   b. Histamine
   c. Menthol
   d. Methyl salicylate

2. The activity of capsicum derivatives is reported to be due to its depleting availability and synthesis of:
   a. endorphins.
   b. norepinephrine.
   c. substance P.
   d. vitamin C.

3. The most abundant protein in humans, which is the basic building constituent of tendons, ligaments, and muscle is:
   a. collagen.
   b. elastin.
   c. gamma globulin.
   d. purine.

4. The activity of counterirritants is most associated with:
   a. anesthetizing pain receptors.
   b. central reduction of receptor pain impulses.
   c. mild localized inflammation.
   d. referring pain to a distant part of the body.

5. Products containing which of the following ingredients are promoted for relief of pain associated with herpes infection?
   a. Methyl nicotinate
   b. Capsaicin
   c. Methyl salicylate
   d. Histamine

6. All of the following statements are true EXCEPT:
   a. application of heat produces analgesia by elevating the pain threshold of peripheral nerve fibers.
   b. application of moist heat is considered to be more efficient than dry heat.
   c. application of heat produces muscle relaxation both locally and centrally.
   d. application of moist heat is indicated in treating circulatory disturbances such as peripheral vascular disease.

7. All of the following statements about pain are true EXCEPT:
   a. reaction to pain is largely inborn rather than acquired.
   b. each person has his own psychological threshold for pain.
   c. pain is associated with emotional factors.
   d. pain is invariably associated with anxiety.

8. Which of the following incites irritation without being rubefacient?
   a. Allyl isothiocyanate
   b. Capsaicin
   c. Histamine
   d. Methyl salicylate

9. Which of the following vehicles is reported to provide greater warmth on application than the others?
   a. Cream
   b. Gel
   c. Liniment
   d. Ointment

10. A customer known to be hypersensitive to camphor and menthol should be advised not to apply which of the following products?
    a. Exocaine
    b. Musterole
    c. Omega oil
    d. ThermoRub

Classified

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THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Horn and Horn Smorgasboard on Cromwell Bridge Road, Beltway Exit 29. Visitors are welcome. Call Harold Katcoff at (301) 358-7036.

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Predictions on Techs and Salesmen

In the last six months, legislation was passed in Congress through the leadership of Senator David Pryor (D-AK) that will have far reaching ramifications in our profession. The PAPPA legislation enclosed in OBRA (Omnibus Budget Reduction Act) requires manufacturers of prescription drugs to give rebates that may, by 1995, give state Medicaid systems more than 25 percent of the costs back to the states. Generic manufacturers will have to give ten percent of their cost back.

This is only the tip of the proverbial iceberg. Prospective DUR demonstration projects, also included in the OBRA package, will help alleviate misuse of the Medicaid system and will help those DUR systems now in place become more effective. More novel ways of dealing with escalating costs in the pharmacy bills being paid by the Medicaid system can be developed from the proposed on-line claims adjudication.

Certainly, one of the highlights of this legislation was the finding that pharmacists aren't being overcompensated by Medicaid or third-parties. HCFA has been told via this legislation that pharmacy fees cannot be cut for four years. For the first time in modern history, our profession has been recognized for its cost effectiveness.

Finally, what is arguably the most important aspect of this monumental federal action is the recognition that pharmacists should be reimbursed for traditional patient counseling *and* for not dispensing medications when it is contraindicated.

My fellow professionals, I believe a new age of pharmacy may have been born and it is up to us to take ''the bull by the horns'' and make the most of the opportunities before us.

Mark A. Levi, P.D.

PRESIDENT

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This continuing education series is provided to MPhA members as a source of continuing education credit. The Maryland Pharmacists Association is approved by the Maryland Board of Pharmacy as a provider of continuing pharmacists' education in this state. To earn 1.0 contact hours of credit (0.1 CEU) toward relicensure, refer to the instructions and quiz on page 30.

Correspondence Course

New Drugs, Part I: Anti-Infectives and Endocrine Agents

by Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to identify and discuss new anti-infectives and endocrine drugs approved by FDA and/or marketed from late 1989 to the present.

Objectives

At the conclusion of this lesson, the participant should be able to:

1. exhibit knowledge of the drugs discussed by pharmacologic and therapeutic classification;
2. choose the indications, mechanism of action, benefits and limitations of the drugs discussed;
3. identify adverse effects and drug interactions associated with the drugs; and
4. demonstrate an ability to counsel patients on these new drugs.

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from

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Gossel

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Two-hundred seventeen new molecular entities were approved for drug use throughout the 1980s, or an average of 21.7 each year. The mean time for FDA approval was 32.3 months. This dynamic activity resulted, in part, from goals set by previous FDA commissioners to put new drug approvals on high priority. There is optimism that this relatively short period for approval will be maintained in the future, thus assuring a constant supply of new and, hopefully, innovative pharmacologic agents.

The FDA classification system (Table 1) categorizes drugs on their probable therapeutic worth for the particular indication(s) that the manufacturer requested upon filing for a New Drug Application (NDA). The designation for each drug, when known, is provided within the text.

This article identifies new molecular entity drugs approved by FDA and/or marketed since late 1989. It discusses anti-infectives and endocrine drugs. The remaining new drugs will be discussed in Parts II and III of this series.

Anti-Infectives

Three cephalosporin antibiotics were approved in 1989: cefixime, cefmetazole and cefpiramide. This brings the total number of cephalosporins approved for marketing in the U.S. to twenty two. Cephalosporins are now the most widely prescribed of all antibiotics. A major reason for their popularity is their wide spectrum of activity and low order of side effects.

Cefixime. (1C; Suprax). Launched in 1989, cefixime is claimed to be the first orally active third generation cephalosporin. Briefly, three "generation" classifications have been assigned to the cephalosporin group. Second and third generation cephalosporins have greater activity against Gram-negative organisms than first generation drugs. Third generation cephalosporins have greater effectiveness against Pseudomonas than the other two. They are also resistant to degradation by beta-lactamase enzymes and, therefore, maintain effective antimicrobial action against cephalosporin-resistant bacteria.

Two such bacteria are *Haemophilus*

TABLE 1

FDA New Drug Classification System

Chemical/Pharmaceutical Standing

1 = New chemical entity
2 = New salt form
3 = New dosage form
4 = New combination
5 = Generic drug
6 = New indication

Therapeutic Potential

A = Important (significant) therapeutic gain over other drugs
AA = Important therapeutic gain, indicated for AIDS patients; fast-track
B = Modest therapeutic gain
C = Important options; little or no therapeutic gain

influenzae and *Moraxella catarrhalis*, common causes of otitis media in children. It is largely this market, pediatric patients with middle ear infections, for which Suprax is targeted. It is claimed to be more effective against these organisms than amoxicillin and cefaclor (Ceclor), and at least equally effective as amoxicillin/potassium clavulanate (Augmentin).

Possibly the most significant difference between Suprax and previously available cephalosporins is its long biological half-life. This permits dosing children before they go to school, eliminating the problem of administering medication during school time.

From a pharmaceutics standpoint, unlike other cephalosporins, the oral suspension, after reconstitution, is stable for 14 days at room temperature. Additionally, the oral suspension is reported to be significantly more bioavailable than the tablets, producing 25 percent to 50 percent higher average peak blood levels. Some authorities recommend that tablets not be substituted for the suspension, and that only the suspension be used to treat otitis media.

The usual adult dosage for cefixime is 400 mg daily; some physicians prefer 200 mg every 12 hours. The recommended dose for children is 8 mg/kg/day (using the suspension), usually in the range of 50 to 200 mg once daily. Suprax is commercially available in 200 mg and 400 mg tablets and a 100 mg/5 mL suspension after reconstitution.

Cefmetazole (1C; Zefazone). Cefmetazole is a second-generation cephalosporin of the cephamycin group. It is indicated for susceptible infections of the intra-abdominal, lower respiratory and urinary tract, skin and skin structures. As for other cephalosporins, cefmetazole's mechanism of action is to interfere with cell wall development. Both the cephalosporin and penicillin antibiotics chemically resemble a component of the peptides that susceptible organisms use to build their cell wall during replication. When taken into the peptide structure, these antibiotics cause the organisms to form defective cell walls which are incapable of maintaining osmotic integrity. At the point of cloning during reproduction, the bacterial cell walls allow influx of excess water which causes them to burst.

Cefmetazole joins cefoxitin (Mefoxin) in the cephamycin category. These two agents contain side chains off the basic beta-lactam core structure which help resist destruction by beta-lactamase enzymes. This advantageously positions them against other second generation cephalosporins in a highly competitive marketplace. In fact, greater therapeutic activity and fewer total doses are the main points in promotion of cefmetazole.

The average dose of cefmetazole is 1 to 2 grams IV every 6 to 12 hours for 5 to 14 days depending on the infection, or 1 to 2 grams for 1 to 4 doses following surgery. Zefazone is available in 1 and 2 gram vials as a powder for reconstitution.

Cefpiramide (1C; no brand name assigned). Although approved by FDA at the time of publication of this article, the manufacturer had neither announced a brand name nor stated marketing plans, if any.

Fluconazole (1AA; Diflucan). Fluconazole is a broad-spectrum fungistatic agent indicated for treatment of oropharyngeal and esophageal candidiasis, and serious systemic candidal infections including urinary tract infections, peritonitis and pneumonia, and cryptococcal meningitis. It is a triazole, structurally related to the imidazole drug ketoconazole (Nizoral) and miconazole (Monistat). Fluconazole covers the spectrum of AIDS-related infections normally treated with amphotericin B (Fungizone), clotrimazole (Lotrimin), ketoconazole and nystatin (Mycostatin, etc.) It is more readily absorbed than ketoconazole and has a much longer half-life allowing for once daily dosing.

In addition to its use in AIDS patients, the drug is also indicated for organ or bone marrow transplantation recipients, persons on chemotherapy, patients with decreased immune response such as rheumatoid arthritis victims who take immunosuppressant drugs (e.g., high dose corticosteroids), and others with a decreased immune response. Immunosuppression increases the likelihood of fungal infection.

Fluconazole specifically inhibits fungal cytochrome P_{450}, an enzyme essential to cell wall survival. It is responsible for the synthesis of ergosterol, the principle sterol in fungal cell membranes. Without adequate ergosterol, fungal cell walls collapse and internal matter is lost. Fluconazole has minimal effect on normal bacterial flora, or on a range of cytochrome P_{450}-medicated reactions in human cells. Human cell membranes contain cholesterol, rather than ergosterol.

Fluconazole is less toxic than amphotericin B or flucytosine (Ancobon), and better tolerated than ketoconazole. Prior to approval in the U.S., fluconazole had reportedly been used to treat over 550,000 patients worldwide. There were only approximately 1.5 percent withdrawals from therapy because of adverse effects. Adverse reactions include ischemia, increase in pulmonary wedge pressure, ventricular tachycardia, bradycardia, hypotension, coughing, and itching.

The dosage regimen is 200 mg at once, and 100 mg daily for 2 to 3 weeks when treating candidiasis. For more serious diseases such as cryptococcal meningitis, the dosage is 400 mg to start followed by 200 to 400 mg daily for at least 10 weeks, possibly indefinitely in AIDS patients. Since tablets reach nearly the same peak plasma concentrations as IV fluconazole, the dosage is the same by both routes of administration. Diflucan is available in 50, 100, and 200 mg tablets, and in 200 mg and 400 mg vials.

Ganciclovir (1AA; Cytovene). Ganciclovir is indicated for treatment of cytomegalovirus (CMV) retinitis in immunocompromised individuals including persons with AIDS. It is chemically related to acyclovir (Zovirax) but much more active against CMV.

The drug has demonstrated antiviral activity against at least 5 of the 6 human herpes viruses: human CMV, herpes simplex 1 and 2, Epstein-Barr virus, and varicella zoster virus. Compared to other antiviral drugs, ganciclovir is 8 to 20 times more active against CMV. However, safety has not yet been established for use in other CMV infections.

CMV retinitis is the most frequently encountered ophthalmic infection by opportunistic organisms in patients with AIDS, appearing in 15 to 46 percent of them. The term "opportunistic" describes organisms against which humans are normally resistant, but in an immunocompromised state, they become pathogenic. Untreated CMV retinitis can destroy the entire retina in less than 6 months, and almost always causes blindness.

Ganciclovir's mechanism of action is not completely understood, but it is believed to be due to selective inhibi-

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>
> *Am Fam Phys* 1987;36:133-140

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Established therapy for today's patients

For respiratory tract infections due to susceptible strains of indicated organisms

Brief Summary.

Consult the package literature for prescribing information.

Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β-hemolytic streptococci).

Contraindication: Known allergy to cephalosporins.

Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Hypersensitivity reactions have been reported in about 1.5% of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of **serum-sickness-like** reactions have been reported with the use of Ceclor. These are characterized by findings of erythema multiforme, rashes, and other skin manifestations accompanied by arthritis/arthralgia, with or without fever, and differ from classic serum sickness in that there is infrequently associated lymphadenopathy and proteinuria, no circulating immune complexes, and no evidence to date of sequelae of the reaction. While further investigation is ongoing, **serum-sickness-like** reactions appear to be due to hypersensitivity and more often occur during or following a second (or subsequent) course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults with an overall occurrence ranging from 1 in 200 (0.5%) in one focused trial to 2 in 8,346 (0.024%) in overall clinical trials (with an incidence in children in clinical trials of 0.055%) to 1 in 38,000 (0.003%) in spontaneous event reports. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy; occasionally these reactions have resulted in hospitalization, usually of short duration (median hospitalization = two to three days, based on postmarketing surveillance studies). In those requiring hospitalization, the symptoms have ranged from mild to severe at the time of admission with more of the severe reactions occurring in children. Antihistamines and glucocorticoids appear to enhance resolution of the signs and symptoms. No serious sequelae have been reported.
- Stevens-Johnson syndrome, toxic epidermal necrolysis, and anaphylaxis have been reported rarely. Anaphylaxis may be more common in patients with a history of penicillin allergy.
- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1% and, rarely, thrombocytopenia and reversible interstitial nephritis.

Abnormalities in laboratory results of uncertain etiology.

- Slight elevations in hepatic enzymes.
- Transient lymphocytosis, leukopenia, and, rarely, hemolytic anemia and reversible neutropenia.
- Rare reports of increased prothrombin time with or without clinical bleeding in patients receiving Ceclor and Coumadin concomitantly.
- Abnormal urinalysis; elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

PA 8791 AMP [021490LRI]

Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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tion of viral DNA polymerase. This inhibits viral DNA synthesis and terminates replication. Human DNA polymerase is also inhibited but at a much lower level.

Ganciclovir is not viricidal and does not cure CMV retinitis. Maintenance therapy is still required, and even as such, reactivation of the disease has occurred in some patients.

Probenecid can reduce ganciclovir excretion by inhibiting renal clearance. Other drugs that inhibit cell replication can potentiate its toxicity, and should be used with it only if potential benefit outweighs the risks. Its manufacturer warns against concurrent use with zidovudine (Retrovir) because of the potential for granulocytopenia. Some clinicians report that with proper monitoring, concurrent administration of these two drugs is in the patient's best interest.

The dose is 5 mg/kg IV infused over one hour (because of its high alkalinity) twice daily for 14 to 21 days with a maintenance dose of 5 mg/kg once daily, or 6 mg/kg once daily 6 out of 7 days. Cytovene is available in 500 mg vials to be diluted to 10 mL using Sterile (not Bacteriostatic) Water for Injection. Preservatives can precipitate and inactivate it.

Mefloquine (1A; Lariam). This antimalarial is a structural analog of quinine. Its mechanism of action is not completely understood, but mefloquine is believed to act by blocking parasites from invading erythrocytes.

Mefloquine is indicated for prevention of *Plasmodium falciparum* and *P. vivax* infections, and for treating mild to moderate acute malaria caused by mefloquine-susceptible strains of *P. falciparum* and *P. vivax*.

Mefloquine is recommended for persons traveling to areas where malaria is endemic. The dose is 250 mg per week, beginning the week before initiating travel, continuing through the trip and for 4 additional weeks, then reducing the dose to 250 mg every other week.

Patients with severe malaria should be treated first with an intravenous antimalarial drug. For *P. vivax* infections, following an initial treatment with mefloquine, primaquine must be given to clear the hepatic phase of infection, and prevent relapse.

Used in prophylactic doses, the most common adverse effects are vomiting, dizziness, fainting, and premature myocardial contractions. Central nervous system disturbance and vertigo are also reported. At larger (treatment) doses, adverse effects are indistinguishable from symptoms of malaria, including nausea, myalgia and dizziness.

Mefloquine must be used cautiously in persons taking quinine, quinidine or beta-adrenergic blockers because of increased potential for arrhythmias. Break-through seizures have been demonstrated when mefloquine is given to persons taking anticonvulsant therapy.

Lariam is available in 250 mg tablets. Tablets should not be taken on an empty stomach, and should be followed with at least 8 ounces of water.

Tioconazole (1C; Vagistat). Tioconazole is a broad-spectrum antifungal that inhibits growth of pathogenic yeasts. It is fungicidal against *Candida albicans*, other *Candida* species, and *Torulopsis*. The new drug competes in a $200-million market, with 6.5 million prescriptions annually. As with other imidazole antifungal agents, ticonazole interferes with ergosterol synthesis to inhibit proper fungal cell wall development, destroy its integrity and allow cell contents to escape, thus killing the organism.

Tioconazole vaginal cream joins clotrimazole vaginal tablets as a one-dose cure for vulvovaginal candidiasis, representing an advantage over other antifungals. Vagistat is available as a 6.5 percent vaginal cream.

Endocrine Drugs

Gonadotrophin Releasing Hormone (GnRH) Agonists. Also called LHRH (luteinizing hormone releasing hormone) agonists, GnRH is a naturally occurring decapeptide (10 amino acids) produced in the hypothalamus. It stimulates the anterior pituitary to release two gonadotrophins, luteinizing hormone (LH) and follicle stimulating hormone (FSH). The drugs released to the market in 1990 are nafarelin (Synarel), gonadorelin (Lutrepulse) and goserelin (Zoladex). An older drug, leuprolide (Lupron) has a similar pharmacologic profile.

Over 2000 GnRH analogs have been synthesized through systematic deletions and replacements of one or more of the 10 amino acids. Synthetic analogs are better than natural hormone for use as drugs, because they are more potent and have extended half-lives. Natural GnRH has a half-life of 27 minutes; nafarelin, for example, has a half-life of approximately 3 hours. Half-lives of synthetic hormones are increased by substituting amino acids at enzymatic cleavage sites with D-amino acids, which renders them less likely to be degraded by enzyme activity.

Many are potent agonists and increase gonadotrophin secretion. Physiologic response depends, in part, on the mode of administration. Potential uses are numerous (Table 2). For example, short-term administration of gonadorelin initiates LH and FSH secretion, with resultant ovulation and increased steroid production. Chronic administration causes initial increased LH and FSH secretion, followed by suppression of gonadotrophin release with resultant decrease in estrogen and testosterone secretion. With reduced secretion of sex hormones, tissues that normally depend on gonadal steroids for activity, become less active. This is the basis for GnRH activity in prostate cancer (goserelin), and endometriosis (nafarelin).

Endogenous GnRH is produced within neurons in the hypothalamus. It

TABLE 2

Potential Therapeutic Applications for GnRH Analogs

Male	Female
Acne	Acne
Cancer (prostate, testicular)	Cancer (ovarian, breast)
Contraception (inhibit spermatogenesis)	Contraception (inhibit ovulation)
Cryptorchidism	Dysfunctional uterine bleeding
Hypogonadal-Hypopituitary insufficiency	Endometriosis
Precocious puberty	Fibrocystic breast disease
Protection from gonadotoxicity of chemotherapy	Hirsutism
	Polycystic ovarian syndrome
	Premenstrual syndrome
	Precocious puberty
	Uterine leiomyoma

passes through the hypophyseal portal vessel system into the anterior pituitary. Here, its binds to receptors to initiate release of gonadotrophic hormones into the systemic circulation. These gonadotrophs, then, stimulate steroid synthesis with increased release of estradiol and progesterone from the ovaries in women, and testosterone from the testes in men.

The mechanism responsible for drug action is described as "down regulation" and "desensitization." The synthetic analogs have greater binding affinity for anterior pituitary receptors than the endogenous hormone. Nafarelin, for example, has a 10-fold higher affinity than GnRH. This potent binding decreases the number of receptors (down-regulation), and makes receptors less sensitive to stimulation (desensitization).

Nafarelin (1C; Synarel) is indicated for treatment of endometriosis, including pain relief and reduction in size and number of lesions associated with the condition. Use is limited to women 18 years of age and older for treatment up to 6 months. Repeated treatment is currently not recommended because of insufficient data to validate safety. Used for longer periods, the drug may lead to a significant reduction in total vertebral bone mass. During clinical trials, there was an average bone loss of 4.3 percent. While not overly significant in most patients, they should be warned of this potential. The drug is comparable to danazol (Danocrine) in relieving clinical symptoms of endometriosis, and represents the first new treatment of this condition in over 14 years.

Used regularly, nafarelin inhibits ovulation and stops menstruation. However, it cannot guarantee contraception. Therefore, sexually active patients who want to avoid pregnancy must use a nonhormonal method of contraception.

Missed doses may initiate ovulation, with potential for conception. The drug should not be used in women who are pregnant, or who may become pregnant while using it, or who are breast feeding.

The most common adverse effects are those related to hypoestrogenemia. These include hot flashes, decreased libido, vaginal dryness, headaches, mood swings, and insomnia.

Patients should be advised not to miss doses. If a topical nasal decongestant is being used concurrently, nafarelin should be used at least 30 minutes prior to the decongestant. The package must be stored upright to prevent air from entering the dip stick and affecting the dose. Refills should be obtained in advance, to assure continuous administration.

The dosage regimen of nafarelin is one spray (200 mcg) in one nostril in the morning followed by another spray in the other nostril 12 hours later. Synarel is available as a 2 mg/mL solution in a 15 mL bottle. Properly used, this will supply 60 sprays — a one-month supply.

Gonadorelin (2C; Lutrepulse) induces ovulation in women with primary hypothalamic amenorrhea. The drug is administered by pulsatile intravenous injection, using the "Lutrepulse pump." By providing the agent in pulsatile fashion, this replaces defective hypothalamic GnRH secretion, duplicating the natural hormonal secretory pattern. If ovulation occurs with the pump in place, therapy should be continued for another two weeks to maintain the corpus luteum.

Goserelin (1C; Zoladex) offers an alternative treatment of prostatic cancer when orchiectomy (castration) or estrogen administration is not feasible or desirable. Results of controlled trials comparing goserelin with orchiectomy are similar. Both treatments are equally effective in increasing survival time.

The effect of goserelin in combination with flutamide (Eulexin) is still in question. Flutamide, launched early in 1989, is used in conjunction with LHRH agonistic drugs (such as leuprolide). The combination of flutamide and leuprolide extended survival 25 percent beyond the period for leuprolide alone, in one study. To date, the combination of flutamide and goserelin has not been investigated. Since the pharmacologic action of goserelin and leuprolide is the same, goserelin should demonstrate similar benefit when given with flutamide, as it does with leuprolide.

Goserelin may cause transient worsening of symptoms, with subsequent bone pain. These side effects should subside within a couple weeks. Other adverse effects include hot flashes, decreased libido, gynecomastia and impotence. Adverse effects are rarely severe enough to necessitate withdrawal of therapy. The drug is not cytotoxic, and can be disposed of in the same manner as other injectable drugs.

The dose of goserelin is 3.6 mg administered subcutaneously every 28 days into the upper abdominal wall. The formulation releases the drug continuously over that period. Zoladex is available as a sterile and totally biodegradable polymer-impregnated implant.

Norgestimate/Ethinyl Estradiol (1,4C; Ortho Cyclen). This new combination of progestin/estrogen was approved near the end of 1989. Norgestimate is new to the U.S., but has long been used in combination with estrogen in Europe as an oral contraceptive. Compared with current monophasic, biphasic, and triphasic formulations, the new monophasic combination appears to be equivalent in efficacy and safety. There is no evidence that this formulation provides clinical improvement over older ones.

The fate of the new combination remains questionable. Shortly after approval, a court restraining order was issued against its manufacturer by another, claiming infringement on the use of what the accuser considers to be its own product. Analysts predict that resolution of legal issues could take considerable time.

Summary

This discussion of new drugs will continue in Part II of this series.

Dickinson's Pharmacy

by Jim Dickinson

Is compounding too risky? When two patients each lost an eye after instilling indomethacin eye drops compounded by a Pittsburgh independent pharmacy, the mass media headlines did more than just bring acute angiush to a seasoned pharmacist.

They set in motion a tide of events that could spell an end to the small level of extemporaneous compounding that still flourishes in many independent pharmacies.

The middle-aged patients—and dozens like them who did not lose their eyes—had all been prescribed indomethacin ophthalmic solution after cataract surgery as prophylaxis for cystoid macular edema. Ophthalmologists are divided on whether this is medically sound; some say indomethacin is only useful as actual treatment for diagnosed cystoid macular edema (less than 6% of cataract patients suffer from this condition) and contend that it is useless as a preventative.

Whatever the merits of that professional dispute, indomethacin ophthalmics are apparently a growing business across the country, as the population ages at an unprecedented rate and cataract surgery becomes a rising tide. But it's also a business that Indocin manufacturer Merck Sharp & Dohme has been strenuously discouraging.

In a standard letter sent to physicians and pharmacists who inquire about compounded Indocin ophthalmic solution, Merck acknowledges that it is considering development of such a commercial product, but stresses: "it is specifically recommended that capsules INDOCIN not be used to prepare topical solutions or suspensions in the absence of data on stability, concentration and possible effects of excipients."

Pennsylvania state and federal FDA investigators said that this is just what Edward Kilkearny, owner of Hieber's Drug Store in downtown Pittsburgh had been doing for years. Nourished by at least 10 ophthalmologists based in the huge medical complex opposite his pharmacy and nearby, the 1952 Duquesne University pharmacy graduate's business quickly came to be basically this kind of compounding; Indocin and/or generic indomethacin capsules were dissolved into Alcon's Replacement Tears over several days and sterilized in an upstairs dentist's autoclave.

The business became so large, investigators said, that it became a packaging operation for other pharmacies and sold direct to wholesalers and ophthalmologists for relabeling.

Then something happened that allowed huge colonies of pseudomonas bacteria to be detected in bottles turned in to Allegheny General Hospital by seriously infected post-surgical cataract patients.

As this column went to press, investigators had not discovered the source of the contamination. Some suggested that it might have been in a new laminar flow hood that Hieber's Drug Store had just installed—but autoclaving should have killed the bacteria. Some speculated that the bacteria might have migrated inside the drug capsules—but again, autoclaving should have killed them.

And some suggested that the sooner Merck got its Indocin Ophthalmic commercial product on the market, the better—that pharmacists should not be doing this kind of work, if blindness could result.

And, of course, there was talk of lawsuits.

Even though the state and federal investigations were still unfinished when I wrote this, there were some clear lessons for all pharmacists in the episode, regardless of the source of pseudomonas.

First, said state pharmaceutical association executive director Carmen DiCello, what Kilkearny was doing, fundamentally, was "very necessary and professional." Pharmacists everywhere definitely should continue to compound, and to increase their compounding business in conjunction with the rising demands of medical practitioners treating an aging population.

Second, he said, pharmacists must ensure that they have the correct equipment for such work, and that they check this equipment daily. In the case of laminar flow hoods, daily tests must verify that the system remains free of bacterial or other contamination. Likewise, any necessary sterilization procedures must be validated daily.

Third, it would be wise to consider purchasing additional liability insurance coverage in case even the most careful precautions do not prevent an additional risk.

DiCello didn't say so, but he could have added a fourth condition which, without anticipating the final results of the investigations at Hieber's Drug Store, should always be a threshold consideration.

Before allowing such compounding business to grow in any pharmacy, the pharmacist should be aware that FDA regards volume-compounded prescriptions as a warning sign that the pharmacy may no longer be a simple state-regulated professional pharmacy, but may in fact be an unregistered manufacturing facility.

In that case, all of the prescriptions so compounded would be viewed as unapproved new drugs, subject to federal prosecution, seizure and injunction.

In some states, such as Pennsylvania, FDA may elect to defer to similar state laws on the issue of when a pharmacy becomes a regulatable manufacturing facility.

The safest bet for compounding pharmacists, from DA's viewpoint, is to confine dispensing to the limits of one prescription per individual patient.

This feature is presented on a grant from "Dickinson's Pharmacy—The Independent Voice," a professionally stimulating 8-page monthly newsletter available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45.

TEST YOURSELF

Q

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A

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Coverage of Prescription Drugs

States are required to cover *all* rebated single source drugs and innovator multiple source drugs (when a restrictive prescription has been issued and the drug is subjected to an acceptable rebate). Drugs not providing an acceptable rebate WILL NOT be eligible for Federal matching funds UNLESS the drug is listed as a "1-A" drug and the Secretary has approved the state's determination that the drug is "medically necessary".

With the exception of a 6 month period for new drugs after initial FDA approval, all drugs *currently* on the market can be subject to prior approval. In addition, there are a limited number of drugs that States, at their option, *MAY* exclude from coverage (See Section on Permissible Drug Restrictions and Prior Approval Programs).

Rebates to States

Manufacturers are required to give the Medicaid program a specific schedule of rebates as a condition of coverage of their prescription drug products.

For patented or brand name drug products (single source and innovator multiple source drug products when a restrictive prescription has been issued), there is a "basic rebate" and an "additional rebate" to recover pharmaceutical price increases that are higher than inflation.

Calculation of the Basic Rebate

Pharmaceutical manufacturers are required to give Medicaid their "best price" in the market, with a maximum of 25% in 1991, and 50% in 1992. The cap phases out for 1993 and thereafter. There is a minimum rebate in 1991 and 1992 of 12 1/2% off AMP and 15% off AMP in 1993 and thereafter. The specific formulas are as follows:

- *For 1991*, the basic rebate is the higher of the AMP minus 87.5% of the AMP OR the AMP minus the best price, subject to a cap of 25% of the AMP. (The AMP, the average manufacturers price, is the price that pharmaceutical manufacturers charge wholesalers to purchase the drug.)
- *For 1992*, the basic rebate is the higher of the AMP minus 87.5% of the AMP OR the AMP minus the best price, subject to a cap of 50% of the AMP.
- *For 1993 and beyond*, the basic rebate is the higher of the AMP minus 85% of the AMP OR the AMP minus the best price.

(NOTE: the definition of "best price" excludes Department of Veterans' Affairs depot drug prices and single award contracts AND "nominal" prices offered to charitable groups or organizations.)

Calculation of the Inflation-Adjustment Rebate

The "additional rebate" will recover any increases in the average manufacturer prices over the rate of inflation, as measured by the Consumer Price Index-all urban consumers (CPI-U). The AMP for the drug as of 10/1/90 is used as the baseline AMP.

For 1991–1993, the additional rebate is calculated by multiplying the number of dosage units of the particular drug dispensed in the state in the quarter times the difference between the average manufacturer's price and the average manufacturer's price as of October 1, 1990, indexed by the CPI-U.

For 1994 and beyond, the additional rebate is calculated by comparing, in each state, the current weighted average manufacturers price for a particular manufacturer's product line to weighted average manufacturers price product line as of October 1, 1990. To determine whether use of aggregation in determining the "additional rebate" reduces the amount of rebates to states, the Secretary is charged with using data collected in 1992 and 1993 to compare the amount of the "additional rebate" that will be received by the state under the weighted aggregate formula as compared with the individual drug formula used in the early years.

Generic Drugs: For generic drug products (non-innovator multiple source), the rebates will be 10% in 1991–1993, and 11% thereafter. (That is, the average price that the manufacturer charges the wholesaler minus 10% (AMP-10%) for years 1991–1993, and AMP-11% for 1994 and beyond.)

Rebate Agreements in Effect: States that had rebate agreements in place with manufacturers prior to enactment are permitted to keep the agreements in effect for the initial term of the agreement if the total aggregate rebates under these agreements equal or exceed 10% of the total aggregate state Medicaid expenditures for that particular company's products in that state. These agreements may continue if savings that are at least as great as the savings achieved under this rebate program are achieved.

Provisions Relating to Multiple Source Drugs

Except for the two modifications outlined below, the provisions state that current HCFA regulations on the coverage and dispensing of multiple source drugs remain in effect.

For innovator multiple source drugs, the language assures the retention of current HCFA regulations that require the dispensing of such a drug when the physician has issued, in his or her own handwriting, a restrictive prescription indicating "brand medically necessary". In instances in which an innovator is dispensed as a result of this restrictive prescription, the manufacturer will be required to give Medicaid the same rebate amount in effect for single source drugs. If the physician does not write medically necessary, the current practice of generic substitution remains intact. Only those generics, however, with the top rating of "A" by the FDA Orange Book can be dispensed to Medicaid patients.

A change to the multiple source drug regulations requires the Secretary to implement a federal "look behind" program which would promote the dispensing of generic drug products, where permissible under state law, by reducing federal Medicaid match for states that do not enforce the "brand medically necessary" provision to block generic substitution.

HCFA is also instructed to establish a federal upper limit (FUL) for all multiple source drugs for which there are three or more products rated as therapeutically and pharmaceutically equivalent, and only using the prices for those products that are rated as such.

Permissible Drug Restrictions and Prior Approval Programs

There are several provisions relating to the state's ability to maintain control over the design of their drug programs through prior approval.

The only drugs that States are not required to cover are those not subject to rebates and the following list of drugs that many States are currently excluding: those used for anorexia or weight gain; fertility; hair growth or cosmetic purposes; barbiturates; smoking cessation; prescription vitamins and minerals, except prenatal vitamins and fluoride preparations; benzodiazepines; drugs sold with associated tests or monitoring services which are available exclusively from the manufacturer; non-prescription (over-the-counter) medications; and cough and cold products. The Secretary will be able to add to this list (by regulation) if state utilization data suggest that such an addition is warranted.

States can continue to operate or establish prior approval programs for all drugs and biologicals *currently* on the market.

For new drugs coming on the market, no prior approval restrictions can be used for at least 6 months after date of approval. After that period, States can place these drugs on prior approval.

To continue to operate (or to establish) a prior approval program after July 1, 1991, States must assure that the physician requester receive a response within 24 hours of making the request. In addition, in an emergency situation in which the physician cannot receive approval for a drug covered under a prior approval program, a prescription of AT LEAST a 72 hours supply must be dispensed.

The language also requires the Secretary to study the impact of prior approval programs on beneficiary and provider access to prescription medications, the impact of states developing prior approval restrictions based on costs, and to make recommendations on reforms of prior approval programs, if such are needed. This report is due 2 years after enactment.

Drug Utilization Review

The modified language establishes a program of prospective (pharmacists counseling) and retrospective drug utilization review and an educational outreach program targeted at improving the drug prescribing and dispensing practices of health professionals. The provisions related to counseling ask pharmacists to offer to counsel patients if in their professional judgement the patient would benefit from their doing so. In addition, the content of the counseling provided by pharmacists is up to the pharmacist's professional discretion. The patient counseling guidelines in the bill reflect the national standards adopted by the National Association of Boards of Pharmacy.

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Pharmacist Reimbursement

The language prohibits states and the Secretary (through HCFA) from reducing for a period of 4 years (January 1, 1991 through December 31, 1994) reimbursement limits (formulas or dispensing fees) for states that were in compliance with HCFA Medicaid pharmacy reimbursement regulations. The intent is to prevent HCFA and the states from focusing drug program cost containment efforts on pharmacists and to study whether current pharmacy reimbursement rates are adequate. To do this, the Secretary is required to conduct a study of states' Medicaid pharmacy reimbursement rates, including dispensing fees.

TABLE 1
Medicaid Prudent Pharmaceutical Purchasing Schedule of Manufacturer Rebates

BRAND NAME PHARMACEUTICAL PRODUCTS
(Single Source and Innovator Multiple Source)

Year	Basic Rebate (Higher of:)	Inflation Adjustment Rebate
1991	AMP—87.5% AMP or AMP—Best Price limited to 25% AMP	AMP—indexed AMP* (individual drug)
1992	AMP—87.5% AMP or AMP—Best Price limited to 50% AMP	AMP—indexed AMP (individual drug)
1993	AMP—85% AMP or AMP—Best Price	AMP—indexed AMP (individual drug)
1994 and beyond	AMP—85% AMP or AMP—Best Price	Weighted AMP across manufacturer product line-aggregate basis

* — The indexed AMP is the AMP for the drug as of October 1, 1990, increases in which can be no greater than the CPI-U.

GENERIC PRODUCTS
(Non-Innovator Multiple Source)

1991–93	AMP—90% AMP
1994 and beyond	AMP—89% AMP

Electronic Prescription Claims Transfer

State medical assistance plans are given incentives to develop and implement a cost-saving on-line pharmacy-based electronic system to capture, adjudicate, and reimburse for Medicaid prescription drug claims. The encouragement given to the states is in the form of a 90/10 FFP match.

Demonstration Projects

Provides for demonstration projects on:

- the effectiveness of on-line prospective drug utilization review in assisting pharmacist's fulfilling patient counseling requirements; and,
- the cost-effectiveness of pharmacists' providing cognitive (clinical) services to patients.

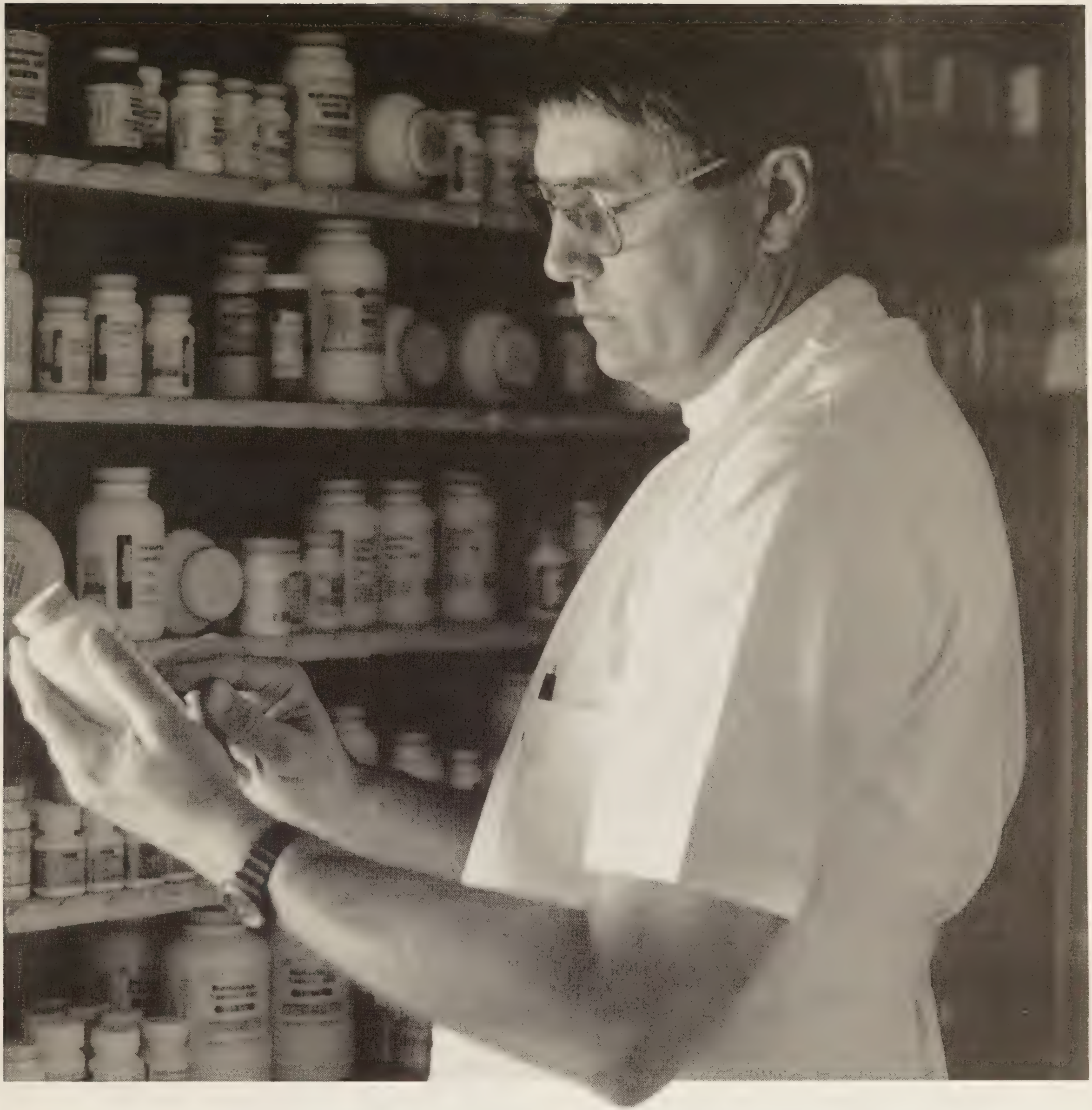
Exemptions

Provides for an exemption from Section 1927 for health maintenance organizations and (and other organizations that contract under Section 1903(m); and, for those hospitals that use formulary systems that bill Medicaid (for outpatient Medicaid prescriptions) no more than their purchase costs for drugs used to fill the prescriptions, as determined by the state Medicaid plan. For the purpose of determining the "best price" in the market for the purpose of Medicaid discounts, however, prices paid by these institutions for drugs are not exempt.

Studies

Provides for studies on:

- Level of rebates received by and number of drug manufacturers participating in state Medical assistance program rebate program. (annual)
- Drug Purchasing and Billing Activities of Various Health Care Systems.
- Manufacturer prices for drugs purchased by hospitals, HMOs, and federal government agencies (annual)
- State prior approval procedures and their impact on beneficiary and provider access to covered outpatient drugs
- Adequacy of current individual state reimbursement rates to pharmacists
- Federal and state reimbursement rates and accessibility of vaccines
- Prudent pharmaceutical purchasing under Medicare outpatient prescription drug programs.



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Facilitating and Enhancing Prospective DUR: Applications of Real-Time Clinical Databases

Mark L. Braunstein, M.D.
Former President and Chief Operating Officer
National Data Corporation
National Data Plaza
Atlanta, GA

Introduction

Numerous studies and analyses have shown there are many costly hazards to be avoided in the application of drug therapies. Participants in this workshop can attest all too well to this fact.

Increasing attention has been paid in the news media, the courts and Congress to medication mismanagement due to patient noncompliance; drug-drug, drug-food and drug-disease interactions; drug-allergy and cross-sensitivity reactions; wrong dosage; and inappropriate prescribing and dispensing. As a result, efforts to solve the problem of medication mismanagement have intensified, with much of the focus placed on the investigation and use of automated, or computerized, prospective drug utilization and review (DUR) systems linked to a central data repository.

In September of this year, amid Congressional debate over the need for prospective DUR in Medicaid programs, the Department of Health and Human Services (DHHS) released its report, "Healthy People 2000." The report bears the endorsement of DHHS Secretary Louis W. Sullivan, M.D. Among its recommendations is the call for an "Increase to at least 75 percent the proportion of pharmacies and other dispensers of prescription medications that use linked systems to provide alerts to potential adverse drug reactions among medications dispensed by different sources to individual patients."

Before adjourning in October, the 101st Congress adopted legislation introduced by Senator David Pryor of Arkansas and mandated for the benefit of Medicaid recipients a comprehensive "drug use review" program for purposes of quality assurance and economy. So comprehensive is this recently passed legislation, that it specifies the criteria for drug use review. Congress took this action little more than a year after it had repealed the Medicare Catastrophic Coverage Act which contained a similar provision for drug use review, along with an outpatient drug benefit for Medicare beneficiaries.

Subject to repeal of the Omnibus Budget Reconciliation Act of 1991 (OBRA-91), it would appear that drug use review, as defined by Congress, is firmly established as a matter of public health policy. Moreover, drug use review, or DUR, as mandated in OBRA-91, could very well become the national standard for quality assurance with regard to drug therapy. The question is: can it be made to work; and, if so, how?

In any case, few would argue with the observation that prospective, or pre-dispensing, DUR, without computer enhancement and under existing circumstances in practice, is becoming increasingly difficult and, in some instances, impossible.

Obstacles to Conducting Effective DUR

As a rule, physicians and pharmacists, for purposes of quality assurance, have long made it a practice of conducting some form of DUR, especially for those patients with multiple prescriptions and diseases. However, the conduct of DUR has become increasingly difficult and, in some cases, impossible for the following reasons:

1. Many patients, especially those with multiple diseases and conditions, frequently see two or more doctors, and sometimes multiple pharmacists, who may unintentionally prescribe or dispense duplicative and interacting prescriptions.
2. The dramatic growth in numbers of drug therapies over the last half century has made it vir-

tually impossible for the office-based physician and the community pharmacist to be aware of all of the thousands of potential adverse drug reactions and interactions.

3. A recent study by the Inspector General reported that "Barriers that impede provision of clinical pharmacy services include the economic structure of the retail pharmacy industry, interprofessional conflicts, limitations on information available to pharmacists, gaps in pharmacy training, and uneven patient demand."

Consequences of Ineffective DUR

Numerous university-based studies have shown conclusively that individuals, especially the elderly, who may suffer from multiple illnesses and take multiple medications prescribed by two or more physicians too often are victims of inappropriate, and sometimes dangerous, prescriptions. For example:

1. Findings of a study by Helene Lipton, Ph.D., and other researchers at the Institute for Health Policy Studies and the Division of Clinical Pharmacy, University of California at San Francisco, indicate that "88 percent of a subsample [of elderly patients discharged from the hospital with at least three prescriptions] "had at least one clinically significant drug problem."
2. Jerry Avorn, M.D. and other researchers at Harvard Medical School reported in late 1988 that over half of the 850 patients residing in 12 intermediate-care nursing homes were taking a prescribed psychoactive drug, including antidepressants, sedative/hypnotics, and powerful antipsychotics.
3. A study of "Psychotropic Drug Use And The Risk of Hip Fracture" by Wayne Ray, Ph.D., et al. of the Department of Preventive Medicine, Vanderbilt University School of Medicine, produced data to "support the hypothesis that the sedative and autonomic effects of psychotropic drugs increase the risk of falling and fractures in elderly persons."
4. Estimates of drug-induced illnesses requiring hospitalization range from 3 to 8 percent annually in the U.S. A study of 1986 hospital admissions in California estimated that 3 percent of the admissions were caused by adverse drug reactions. The California report conservatively estimated that these drug-induced hospitalizations cost the State $600 million each year.

Solving the Problem of Ineffective DUR

The new drug use review (DUR) program mandated by Congress for the Medicaid programs takes a number of very important steps toward solving several aspects of the problem.

1. The law specifically states, with respect to prospective DUR: "The review shall include screening for potential drug therapy problems" through the use of such reference compendia as the United States Pharmacopeia-Drug Information; and "standards for counseling of individuals receiving benefits . . . by pharmacists."
2. An "ongoing periodic examination of claims data and other records" must be performed retrospectively "in order to identify patterns of fraud, abuse, gross overuse, or inappropriate or medically unnecessary care among physicians, pharmacists and [Medicaid recipients]."
3. The DUR program includes an educational program to "provide for active and ongoing educational outreach programs . . . to educate practitioners on common drug therapy problems with the aim of improving prescribing or dispensing practices."
4. The legislation provides for 10 statewide demonstrations of computer-enhanced prospective DUR, and a demonstration of cognitive reimbursement for pharmacists, "whether or not a drug is dispensed."

Obviously, the most effective way of dealing with a potentially dangerous drug-induced reaction is to detect the problem prior to prescribing or dispensing. The majority of the nation's pharmacists today do use software in their stand-alone PCs for expediting and enhancing the conduct of prospective DUR, but connecting these PCs to a central data repository would be far more effective.

The Vehicle for Real-Time

Computer automation on a real-time basis is widespread today in the private health insurance industry for processing and adjudicating pharmacy claims.

According to a 1989 survey of the National Association of Retail Druggists, an estimated 85 percent of pharmacies in the U.S. are automated to some extent through the use of PCs. Many pharmacies have utilized stand-alone PCs for more than a decade to save time and cut costs in record keeping, billing and accounting, and to facilitate and enhance prospective DUR.

A computer technology transfer in the mid-1980s, from the finance and banking industry to health care management, has revolutionized the processing of pharmacy reimbursement claims. Companies involved in adjudicating financial transactions with computers on a real-time basis through telecommunications networks began to offer and apply that same technology in health care management. Today, millions of pharmacy claims are being processed and adjudicated at the point of service for private insurers on a real-time, or pre-dispensing, basis through telecommunications networks.

Real-time electronic claims management at point of service is far more cost effective than retrospective

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paper and computer tape-to-tape batch claims processing. Pharmacists much prefer real-time processing, simply because it eliminates paperwork, saves a great deal of time and money, and all of the important answers regarding eligibility, coverage and payment are provided prior to dispensing.

A real-time electronic claims management system also provides the ready-made vehicle, or platform, for real-time, computer-enhanced prospective DUR. Moreover, the very same data used in real-time fiscal adjudication of pharmacy claims can also be used for clinical adjudication, or real-time prospective DUR. Therefore, a growing number of companies involved in providing real-time claims adjudication services to private insurers are beginning to offer real-time prospective DUR as an add-on component of claims adjudication.

Senator Pryor's legislation in OBRA-91 provides for 90-percent federal funding to Medicaid programs for converting to real-time electronic claims management at point of service, which, in turn, will provide the platform for the 10 statewide computer-enhanced prospective, or pre-dispensing, DUR demonstrations.

Application of Pro-DUR Criteria

Clinical databases capable of supporting prospective DUR at point of service as a component of real-time electronic claims management are available in the marketplace today.

The process involved in conducting real-time, computer-enhanced prospective DUR from a central data repository is as follows:

1. The physician writes the prescription(s) for the patient.
2. The patient submits the prescription(s) to a pharmacist for dispensing.
3. The pharmacist keys into his PC or point-of-service terminal the information required for real-time prospective DUR as well as for fiscal adjudication of the claim.
4. While fiscally adjudicating the claim, the computer performs a number of comprehensive analyses based on the patient's active drug profile and available information on allergies and medical conditions.
5. The clinical database should be capable of applying the following criteria for prospective DUR, and providing warnings to the pharmacist within seconds after input:
   —Prescriptions, new and refilled, which result in duplicate drug therapy.
   —Prescriptions which may result in therapeutic overlap, with a potential for significant toxicity.
   —Severe to mild adverse drug interactions.
   —Information on potential reactions caused by allergy and cross-sensitivity.
   —precautions for potentially severe to moderate drug-disease reactions.
   —Prescribing limits, including exceeding the maximum dose and falling below the minimum dose per day, exceeding the maximum duration of dose, and, by age, the maximum dose per day and maximum duration of therapy.
   —Patient compliance, based on early and/or late refills.

The pharmacist should also be able to quickly retrieve from the database the name(s) of the prescriber(s), location(s), and telephone number(s), if the need arises for the pharmacist to obtain advice from the prescriber(s) on how to proceed.

Such clinical databases could be described as an electronic compendia of the three reference compendia cited in the Pryor legislation, and probably other references as well. Typically, a database for real-time prospective DUR is updated on a continuing basis, as new findings are discovered in post-marketing surveillance and clinical trials associated with FDA-approved prescription drugs.

A comprehensive clinical drug database for supporting applications in medicine as well as in pharmacy should contain structured and referenced data in the following areas:

Drug Identification—five-tiered internal identification; unique classes with comparisons of drugs; Links to external classification systems (AHFS, CAS, VA, NDC, and ICD9); Significant formulation and manufacturing methods; links to product databases; therapeutic overlap indicator; list of inactive ingredients and subcomponents; and stability and storage information.

Uses/Indications—FDA approved, unlabeled, and unaccepted uses; causative factors and restrictions listed; and treatment rank, clinical role, and treatment outcome.

Pharmacology/Pharmacokinetics—Selection factors; onset, time to peak, and duration of action; and significant pharmacokinetic factors.

Precautions—Diseases and special conditions affecting drug therapy; five precaution levels; explanatory phrases; and class level and drug level precautions.

Age Precautions—Age precautions by age condition (geriatrics and pediatrics); age precautions by age in years or months; five precaution levels; and explanatory phrases.

Pregnancy Precautions—Pregnancy precautions by trimester and labor/delivery; FDA risk factor, Briggs factor, and precaution level; and Placental transfer information.

Breast Feeding Precautions—Amount excreted in breast milk; precaution level; American Academy of Pediatrics recommendations; and breast feeding rating.

Allergy/Cross Sensitivity—Class, individual drug and substance cross sensitivity; precaution level; and incidence.

Drug Interactions—Drug-drug, drug-food, and drug-lab interactions; effect code and incidence; drug interaction level, precaution level, and drug-food intensity level; effect phrases; route-specific; and special conditions-specific.

Adverse Effects—Extensive listing of adverse reactions (ADRs), subordinate ADRs, and symptoms of ADRs; five ADR levels; incidence; allergic, overdose, toxic and long-term effects are differentiated; carcinogenic effects and drug effect on fertility indicated; and management information.

Parameters To Monitor—Patient parameters that should be monitored during therapy; recommended monitoring frequency; and serum drug concentrations.

Missed Dose Instructions—Appropriate action to take in the event a dose is missed; and instructions specific for the number of doses missed, and for regimen.

Dosing—Dose regimens by use, route and form; dose regimens for specific ages, weights and creatinine clearance; dose regimens for geriatrics, renal insufficiency, etc.; Sig, regimen type/rank; prescribing limits; duration of therapy; and dosing information.

References—All data should be verified by at least two recognized references; and references for all data should be retrievable.

A database similar to the one just described was used recently to retrospectively analyze from a state Medicaid pharmacy program more than 20,000 prescriptions dispensed to almost 2,000 Medicaid recipients over a 12-month period. The purpose was to determine the extent of potential medication mismanagement. For example, findings showed that 13 percent of the prescriptions may have resulted in potentially serious adverse drug interactions, and 12 percent of the prescriptions were found to overlap therapeutically.

Future Application of Real-Time Clinical Databases

The ideal application of prospective DUR criteria in real time prior to dispensing would be for such an integrated system with a central data repository to be used by both the physician and the pharmacist.

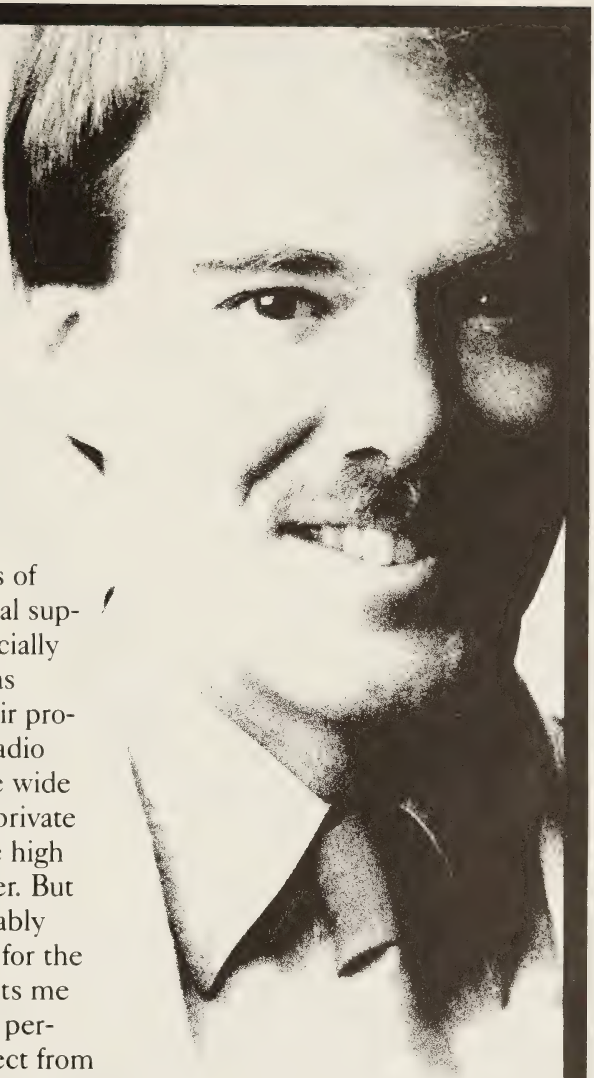
1. Inserting the physician in the real-time, computer-enhanced prospective DUR "loop" would provide the ability to prevent inappropriate and potentially dangerous medication prior to prescribing, especially when multiple doctors are involved.
2. Access to such a database by both the physician and pharmacist would substantially improve interdisciplinary working relationships for the good of their patients.

There is at least one proposed study awaiting funding for testing of a clinical database by physicians in clinic. The study would be conducted by the Institute for Public Health Policy Studies at the University of California, San Francisco, with Dr. Helene Hipton as chief investigator. The "major goal of the proposed study is to provide the first rigorous, systematic comparison of the effectiveness of two interventions to reduce drug-therapy problems among geriatric outpatients by improving the quality of prescribing: (1) the application of a prospective computerized drug utilization review (DUR) system, and (2) ongoing clinical pharmacists' drug regimen reviews and consultations to providers."

A third application of these advanced clinical databases is in the evaluation by pharmacist consultants of the drug regimens of nursing home residents. This application, which is already in use, greatly enhances a consultant pharmacist's ability to detect, prevent, resolve and document drug-related problems.

Real-Time Prospective DUR in Medicaid

1. A comprehensive computerized prospective DUR system, with a central data repository linked to a pharmacy network, would assist the provider in substantially improving the quality of care.
   (a) The quick-response system would alert the provider to potential adverse drug reactions and interactions, especially for those patients who take multiple drugs that are prescribed by multiple doctors and are filled by more than one pharmacy.
   (b) The system also would encourage an improved interdisciplinary working relationship between health care providers for the good of their patients.
2. Such a system would reduce Medicaid program costs overall.
   (a) The number of drug-induced hospitalizations, doctor visits and injuries would be reduced by alerting the provider to potentially serious adverse drug reactions and interactions.
   (b) The system would alert the provider to costly, unnecessary, and sometimes harmful duplicate prescriptions for the same patient.



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Effective Tax Planning Know When and How to Take Proper Steps

Gerald I. Klein
Consulting Group Associate
Shearson Lehman Hutton

Now that you have had time to recuperate from completing your 1989 income tax return, you should start considering strategies to reduce your 1990 tax burden. Early implementation of some of the following strategies may allow you to reap benefits next April 15.

As always, effective tax planning involves knowing when and how to:

- accelerate rather than defer income and deductions
- take advantage of all available deductions
- minimize taxes on your investments

Know When to Accelerate or Defer Income and Deductions

You may wish to defer income and accelerate deductions if you feel that your 1990 income will be greater than your projected income for 1991. This strategy may be used to reduce or avoid the impact of having income taxed at a higher tax bracket.

For example, while there are only two tax brackets (15% and 28%), you may be subject to a 5% tax rate surcharge if your taxable income is above a certain level.

Take Advantage of All Available Deductions

While Congress has eliminated the ability to take many of the deductions and losses that existed prior to the Tax Reform Act of 1986, opportunities still remain that may allow you to reduce your 1990 taxes.

For example, medical expenses may be deducted only to the extent that they exceed 7½% of your adjusted gross income. If you anticipate incurring significant medical expenses next year, you may wish to delay elective medical care you planned for 1990 until 1991. Grouping these expenses together will give you a greater chance of exceeding this deduction limitation.

You may also consider reducing any outstanding credit or charge account balances (consumer interest) on which you are currently paying interest expense. Only 10% of these expenses are deductible, and the deduction will be eliminated in 1991. If you don't have the funds readily available to pay off the debts, you should consider applying for a home equity loan. To the extent your aggregated home equity loans do not exceed $100,000, you may convert consumer interest to interest that is fully deductible.

Consider Tax-Advantaged Investments

Municipal bonds represent one of the only remaining tax-free investments available to individual investors today. Municipal bonds are free from federal income taxes and usually from state and local taxes, as well, in the state of issuance. Because of their potential for triple tax-exemption, municipal bonds have been in demand by individual investors looking for a way to reduce the annual bite of federal, state and local income taxes on their investment income.

Municipal bonds are especially attractive when calculated on a taxable equivalent yield basis—that is, the yield needed on a taxable investment to match a tax-free municipal bond. For an investor in the 28% marginal federal income tax bracket, a taxable investment would need a yield to maturity of as high as 10.07% before it would break even with a tax-free municipal bond yielding 7¼%. If you are subject to state income taxes, the impact of the state income tax on your investment income would push the required taxable equivalent yield even higher.

An annuity provides yet another way to reduce your taxable income in 1990 by deferring taxes on funds needed for the future.

Minimize Taxes on Your Investments

Currently, gains from the sale of your securities are taxed at the same rate as other taxable income. However, there is pending legislation in Washington designed to re-establish a lower capital gains rate. You might wish to consider postponing recognition of gains in anticipation of a lower rate.

Feel free to contact me or your personal tax advisor to discuss the proper strategy for you. We can help you put an effective tax-planning strategy into place early. I can be reached at (301)783-8605.

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New *Ident-A-Drug Handbook*

Pharmacist's Letter has just released a new reference book called *Ident-A-Drug Handbook* to identify tablets and capsules. The Handbook solves the problem of identifying tablets and capsules that do not have the name of the medication imprinted on the pill.

The publisher, Jeff Jellin, Pharm.D. says, "Now pharmacists don't have to guess at the contents of a medication when a patient pulls out some little white pills and asks for a fresh supply." He adds, "It's also extremely useful when a physician or nurse calls up and asks what is this little green tablet with XYZ 123 on it?"

The pharmacist just looks up the imprinted code number in the Handbook to determine the contents of the medication.

The problem of identifying pills is becoming worse everyday. There are an increasing number of products on the market. More generics. More strengths. More manufacturers. And more repackagers.

This is coupled with the fact that patients are getting medications from physicians, mail-order firms, HMOs, clinics, and other pharmacies as dictated by third-party payors.

In many cases the buying arrangements by wholesalers or buying groups mean that the source of supply changes and the appearance of many medications changes from month to month. Pharmacists can even have difficulty recognizing medications dispensed by their own pharmacy.

Pharmacists can use the Handbook to answer inquiries from nurses, physicians, long-term care facilities, schools, law enforcement officers, parents, and patients who need to know the contents of various medications.

The *Ident-A-Drug Handbook* identifies the approximately 6,000 drug products that are not imprinted with the name of the drug. It lists the code number, dose, manufacturer, appearance, etc. for each drug.

Pharmacists can obtain a copy of *Ident-A-Drug Handbook* by contacting Pharmacist's Letter, 8834 Hildreth, Stockton, CA 95212, 209/931-2923. Single copies are $23 (all taxes and shipping are already included). Quantity discounts are available.

APHA Launches National Pharmacy Employment Bulletin

The American Pharmaceutical Association (APhA) announces the publication of *Pharmacy UPDATE,* a newsmagazine that will provide the nation's pharmacists with weekly listings of employment opportunities and provide employers with their first cost-effective opportunity to reach pharmacists in all areas of practice, nationwide.

The premier issue of *Pharmacy UPDATE,* July 16, 1990, went to all APhA members, as well as to registered pharmacists in the states of Connecticut, Delaware, Maryland, New Jersey, New York, and Pennsylvania. By October, *UPDATE* will be sent weekly to all registered pharmacists and to pharmacy students across the country.

UPDATE is being published in conjunction with Valley Forge Press of Valley Forge, PA, a company that specializes in providing employment information and timely news information to select job markets.

"With publication of the *UPDATE,*" says APhA Executive Vice-President John A. Gans, "APhA fulfills a 28-year-long goal to establish a profession-wide publication."

Pharmacy UPDATE will be biweekly until mid-August when it will become weekly.

The publication will help fulfill a major commitment of APhA—to serve the needs of employee pharmacists across the country. *Pharmacy UPDATE* will provide the first national listing of practice and employment opportunities in the history of American pharmacy, consolidating career information for both employees and employers.

These listings will allow all pharmacists to explore opportunities to use their skills in a broad spectrum of practice settings and to pursue career development and enhancement across the country. The publication will allow employers to easily reach a national, diverse audience of pharmacists, enabling them to present opportunities to pharmacists in all practice settings.

Pharmacy UPDATE will also provide broad news coverage of the profession with information on community, hospital, and consulting pharmacy practice, pharmaceutical science, education, student affairs, pharmaceutical manufacturing, and government regulation. *UPDATE* will list comprehensive drug recalls and present a calendar of pharmacy events.

Because *Pharmacy UPDATE* seeks to be a publication for *all* pharmacists, APhA is inviting all national and state pharmacy organizations to submit news items and calendars.

Advertising rates in *UPDATE* are extremely competitive with metropolitan newspapers. Rates range from $140 for 1/18th page to $2,700 for a full page. Advertisements are grouped geographically by state, making them easy to find.

To receive a copy of *Pharmacy UPDATE,* or for more information about advertising, contact Valley Forge Press, (215) 935-3301, FAX (215) 935-8208, 1288 Valley Forge Road, Suite 50, P.O. Box 1135, Valley Forge, PA 19481.

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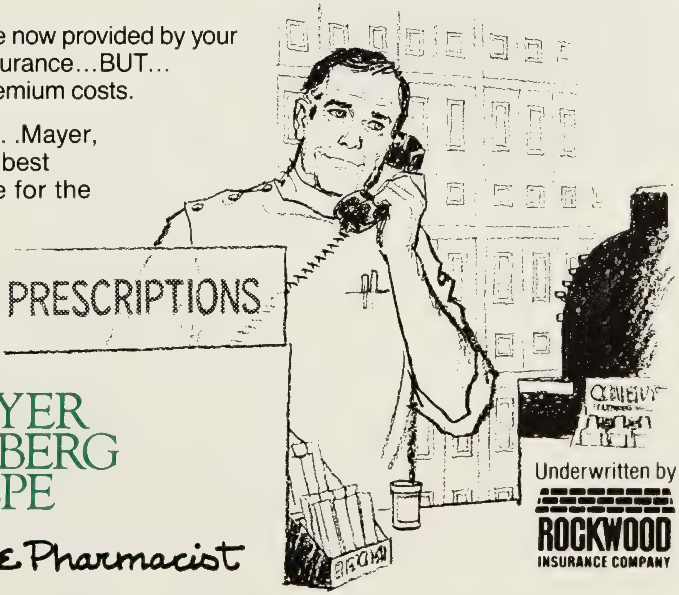

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Insurance for the Pharmacist

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Bergen Brunswig People Make The Difference!

The Difference: We Go The Extra Mile In Maryland

Bergen Brunswig Marketing Consultants are your partners in business. We can help you select new merchandise for your trading area, price your products competitively, and help you run your store more efficiently and profitably.

Each Customer Marketing Consultant is supported by a network of merchandising, operational, and finance experts.

Our merchandisers work in your store. Our drivers are prompt and friendly. Our order fillers are accurate.

We are your full service wholesaler.

For more information, talk to your Bergen Brunswig Customer Marketing Consultant. We'll make the difference!

Bergen Brunswig Drug Company
Your Partner in Productivity

BBDC - Norfolk Division, 6435 Tidewater Drive, Norfolk, VA 23509
Jerry Wolasky, Division Manager Rick Oyler, Sales Manager
(800) 446-8209

USP® DRUG PRODUCT PROBLEM REPORTING PROGRAM

File Access Number

PRODUCT NAME (brand name and generic name)

DOSAGE FORM (tablet, capsule, injectable, etc.)	SIZE/TYPE OF CONTAINER	STRENGTH	NDC NUMBER

LOT NUMBER(S)	EXPIRATION DATE(S)
NAME AND ADDRESS OF THE MANUFACTURER	NAME AND ADDRESS OF LABELER (if different from manufacturer)

YOUR NAME & TITLE (please type or print)

YOUR PRACTICE LOCATION (include establishment name, address and zip code)

PHONE NUMBER AT PRACTICE LOCATION (include area code)	If requested, will the actual product involved be available for examination by the manufacturer or FDA? *(Do not send samples to USP)* ☐ Yes ☐ No

PLEASE INDICATE TO WHOM USP MAY VOLUNTARILY DISCLOSE YOUR IDENTITY (check box(es) that apply)

You may release my identity to:

☐ The manufacturer and/or labeler as listed above ☐ The Food and Drug Administration ☐ Other persons requesting a copy of this report

SIGNATURE OF REPORTER	DATE

PROBLEMS NOTED OR SUSPECTED (If more space is needed, please attach separate page) Date problem occurred or observed: ________________

Presented in cooperation with Maryland Pharmacists Association

Drug product quality is as important to us as it is to you. The **USP Drug Product Problem Reporting Program** is relying on your observations of poor product quality, therapeutic ineffectiveness, packaging and labeling problems, and possible product tampering to improve the quality of prescription and OTC drug products in the marketplace. The USP program is a private, non-governmental program designed to immediately inform participating product manufacturers and the FDA of potential health hazards and defective products based on the report *you* submit.

Reports may be submitted in writing using a USP report form or by calling USP toll free. The manufacturer or the FDA may contact you directly to discuss your concerns and USP will forward to you any information we may receive.

TO REPORT DRUG PRODUCT PROBLEMS

CALL USP

1-800-638-6725

in Maryland call collect (301) 881-0256

Your reports will be computerized and correlated with reports from other health professionals. This will allow for trend analysis of medical products on the market.

Your input is needed to help provide a complete picture of current trends for a more accurate evaluation of these products. Reports of problems experienced in your practice will help to provide practical input into the improvement of compendial standards in the USP/NF or drug information monographs in the USP DI.

We hope you will continue to support the USP Drug Product Problem Reporting Program . . . your input can make a difference!

USP®

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Call Toll Free Anytime

1-800-638-6725

In Maryland, call collect
1-301-881-0256 between 9:00 AM
and 4:30 PM Eastern Time
FAX 1-301-881-5021

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Nite Light
Nighttime Cough & Cold Relief for Children
Triaminic Syrup
Colds and Allergies
Triaminic Expectorant
Chest and Head Congestion
Triaminic-DM Syrup
Cough Relief
Triaminicol Multi-Symptom Relief
Colds with Coughs

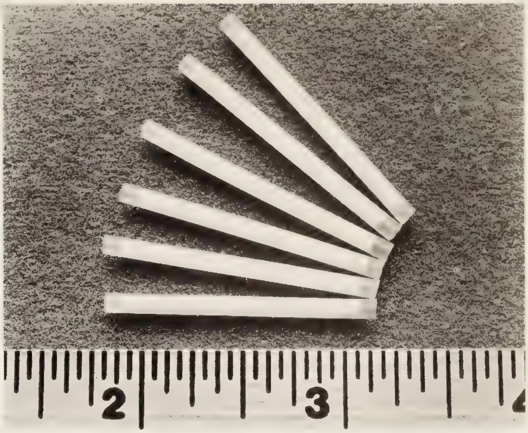
Triaminic cough and cold medicines have become the sponsor of "School Day Forecast," seen weekday mornings on The Weather Channel. Special promotions of the Triaminic line should lead to increased consumer demand.

Toradol
15 mg
15 mg
30 mg
30 mg
60 mg
60 mg

Syntex has released Toradol, the first injectable NSAID approved as an alternative to narcotics for the treatment of short-term management of pain. Toradol is supplied in prefilled, ready-to-use Cartrix syringes.

Doctor Recommended
TheraFlu
Flu, Cold & Cough Medicine
Hot liquid medicine for:
• cough
• nasal congestion
• headache
• body ache
• fever
• sore throat
Natural Lemon Flavor
6 Packets
Doctor Recommended
TheraFlu
Flu and Cold Medicine
Hot liquid medicine for:
• nasal congestion
• headache
• body ache
• fever
• sore throat

Sandoz has announced an extensive promotional campaign for its new non-prescription cold and flu medication—TheraFlu. In addition to running 30 second national spot for TheraFlu on the Weather Channel, Sandoz will tag the end of each commercial with the names of local retailers.



American Home Products has announced the release of Norplant, the new implantable contraceptive. The implantable rods release estrogen derivatives thereby precluding the compliance problems with oral birth control pills.

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Continuing Education

Continuing Education Quiz

The Maryland Pharmacist **DECEMBER 1990**

Complete and mail entire page with $5.00 check, $10.00 to non-MPhA members, made payable to Maryland Pharmacists Association, to: Maryland Pharmacist CE, 650 West Lombard Street, Baltimore, MD 21201. The completed quiz for this issue must be received by March 1, 1991. A continuing education certificate for one contact credit will be mailed to you within 30 days. Please type or print clearly.

Name ______________________________

Social Security Number ______________________________

Address ______________________________

City/State/Zip ______________________________

Is this program used to meet your mandatory CE? [ ] Yes [ ] No

Did this article achieve its stated objectives? [ ] Yes [ ] No

How long did it take you to complete the program? ____________ minutes

New Drugs: Part I

1. FDA's classification system of 1A, 1B, and 1C for new drugs refers to the drug's:
   a. potential for causing birth defects.
   b. probable therapeutic worth.
   c. pharmacologic category.
   d. point of activity on the myocardium.

2. The ability of cephalosporins to interfere with bacterial cell wall development is due to the fact that they resemble a component of bacterial:
   a. beta-lactamase.
   b. DNA.
   c. ergosterol.
   d. peptides.

3. Ganciclovir is believed to inhibit viral:
   a. alpha-lactamase.
   b. cytochromase.
   c. monamine oxidase.
   d. polymerase.

4. Gonadorelin, goserelin and nafarelin are similar in that they are agonists of which of the following naturally occurring hormone?
   a. ACTH
   b. ICSH
   c. LHRH
   d. TSH

5. The agents referred to in question #4 above are indicated for treating all of the following diseases EXCEPT:
   a. amenorrhea.
   b. endometriosis.
   c. hypothyroidism.
   d. prostate cancer.

6. The cephalosporin with the longest biological half-life among those approved by FDA in 1989-90 is:
   a. cefixime.
   b. cefmetazole.
   c. cefpiramide.

7. Diflucan acts on susceptible fungi by inhibiting the synthesis of:
   a. beta-lactamase.
   b. DNA.
   c. ergosterol.
   d. peptides.

8. Patients receiving a prescription for Synarel should be instructed on all of the following EXCEPT:
   a. store the package in an upright position.
   b. do not miss doses; it may take several years of therapy for noticeable improvement in your condition.
   c. spray the medication into one nostril in the morning, and spray a second dose into the other nostril 12 hours later.
   d. obtain refills before you run out of medication so that you do not miss any doses.

9. The drug that reportedly reduces ganciclovir's excretion by inhibiting its renal clearance is:
   a. furosemide.
   b. hydrochlorothiazide.
   c. probenecid.
   d. spironolactone.

10. Ortho Cyclen is classed as which of the following types of oral contraceptives?
    a. Monophasic
    b. Biphasic
    c. Triphasic
    d. Polyphasic

Classified

PHARMACIST WANTED for full and part-time positions available. Benefits include health insurance, paid vacation and NO evening hours in a computerized independent pharmacy located on the Eastern Shore. Call Fred Beatie at (301) 742-1188 or (301) 742-0914 to discuss this exciting opportunity.

"Rx" LICENSE PLATES are still available through the Association. When you receive your license renewal form, contact Mary Ann at the Association (727-0746) for details. The plates say "Maryland Pharmacists Association" in addition to "Rx" and the number. This offer is open to members and their families only.

THE BALTIMORE VETERAN DRUGGISTS ASSOCIATION (organized in 1926) meets every third Wednesday of the month at Horn and Horn Smorgasboard on Cromwell Bridge Road, Beltway Exit 29. Visitors are welcome. Call Harold Katcoff at (301) 358-7036.

FREE CLASSIFIEDS. MPhA members may place a classified ad at no cost in the journal. Send your typewritten ad to 650 West Lombard St., Baltimore, Maryland 21201.

EVERY SUNDAY MORNING at 6:30 a.m. on WCAO-AM and 8:00 a.m. on WXYZ-FM listen to Phil Weiner broadcast the pharmacy public relations program, "Your Best Neighbor," the oldest continuous public service show in Baltimore.

FOR RENT St. Thomas, U.S. Virgin Islands Condominium (weekly rental). Two bedrooms, two baths, overlooks the Caribbean on the beach. Ideal for two couples or family. Please contact: Dr. Steven J. Berlin, (301) 247-4770, evenings: (301) 252-7508.

PHARMACIST WANTED Full-time and part-time positions available at progressive independent pharmacy in rural setting. Full benefit package and competitive wages. Computerized. Closed Sundays. Will accept applications from recent graduates. Call Tom Connelly in Rising Sun at (301) 658-6444.

FOR RENT: St. John, USVI, Gallow's Point—Oceanfront 1 bedroom condo with pool and daily maid service. Low airfare available. 10% discount to pharmacists. Call Richard Matheny (301) 948-8547.

FDA HOTLINE FOR AIDS information is 800-432-AIDS.

PHARMACISTS REHABILITATION COMMITTEE HOTLINE is (301) 727-0746.

FOR RENT: St. Thomas, USVI, Mahogany Run—Oceanfront 2 bedroom, 2 bath condo. Perfect for 2 couples or family. Golf, tennis and pool. 10% discount to pharmacists. Low airfare available. Call Richard Matheny (301) 948-8547.

75 PHARMACISTS AVAILABLE Retail, hospital, and institutional pharmacists are available for all your scheduling needs. Full or part-time, for holidays, vacation, illness, or any time you need a pharmacist. Need a pharmacist? Call 659-STAT.

RELIEF PHARMACIST WANTED 2 evenings per week, flexible schedule. Call (301) 837-8391 between 9am and 9pm.

THINKING OF RETIRING? Motivated, energetic pharmacist looking to buy a profitable retail pharmacy. Some owner financing is desired. Please contact through the MPhA office at (301) 727-0746.

CONSULTANT PHARMACIST WANTED Englander's Pharmacy has an immediate opening for local nursing homes in Oakland. Flexible hours. Part-time or full-time work also available. Send resume to Englander's Pharmacy, 205 E. Alder St., Oakland, MD 21550 or call (301) 334-9455.

PHARMACIST WANTED Opportunity for future focusing professional with progressive, growing community pharmacies in southern Maryland. Call Beverly at (301) 855-7554.

PHARMACIST WANTED Quaint but developing boating village of Rock Hall desires pharmacist to work in established pharmacy. Must be willing to work in relaxed atmosphere in old fashioned historically preserved pharmacy. Call Art Willis at (301) 778-1342.

PHARMACIST WANTED Part-time pharmacist position available in computerized patient oriented pharmacy. Every other weekend on Saturday (9am–6pm) and Sunday (10am–3pm). Excellent salary. Call Judy Wood or Mike Thomas at (301) 744-7704.

FOR RENT Princeville, Kauai, Hawaii. Golfer's paradise–ocean front condo. One bedroom sleeps 4, 2 baths. Near Bali Hai and many beautiful beaches. 10% discount to pharmacists. Low airfare available. Only these dates left for 1991: 1/1/91 to 1/29/91, 2/26/91 to 4/23/91 and 10/10/91 to 11/5/91, weekly. Call Donald R. Young at (301) 745-2831.

You Like To Help.

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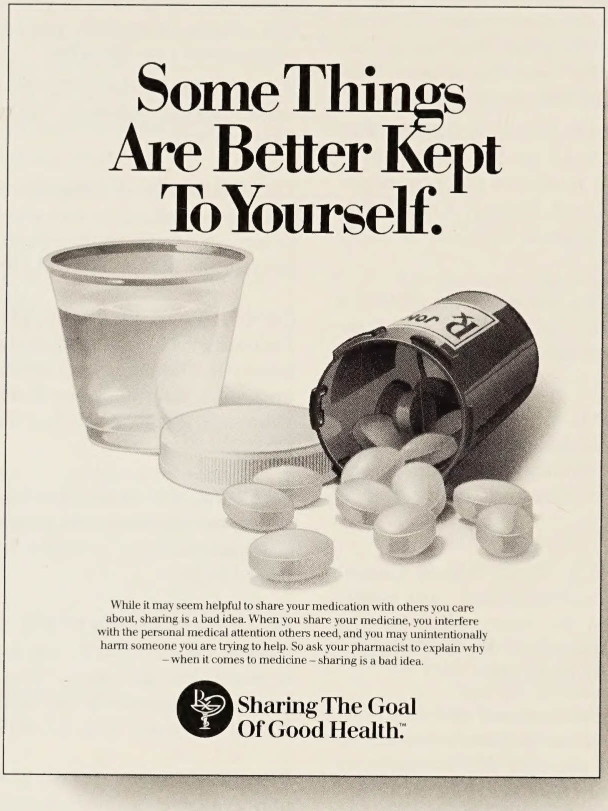

Some Things Are Better Kept To Yourself.

While it may seem helpful to share your medication with others you care about, sharing is a bad idea. When you share your medicine, you interfere with the personal medical attention others need, and you may unintentionally harm someone you are trying to help. So ask your pharmacist to explain why – when it comes to medicine – sharing is a bad idea.

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